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**PORTIONS OF THIS DOCUMENT  
MAY BE UNREADABLE, DUE TO  
THE QUALITY OF THE  
ORIGINAL**



1927 LAKESIDE PARKWAY  
SUITE 614  
TUCKER, GEORGIA 30084  
404-938-7710

2398

C-586-1-0-56

January 8, 1990

Ms. Dorothy Rayfield  
Site Investigation and Support Branch  
Waste Management Division  
Environmental Protection Agency  
345 Courtland Street, N.E.  
Atlanta, Georgia 30365

Subject: Site Screening Inspection, Phase II  
Evans Property Sludge Site  
Melbourne, Brevard County, Florida  
TDD No. F4-8911-24  
EPA ID No. FLD980556500

Dear Ms. Rayfield:

Enclosed please find information on the Evans Property Sludge Site, a revised HRS score, and a public water supply map for the Melbourne area. This information is being sent as a follow-up to your telephone conversation with K.D. Pass on November 15 regarding this site. The initial water information related to me during an offsite reconnaissance indicated that almost all the residences in the Melbourne area were served by a public water supply. Based on this information, it appeared that the site should not have scored on the Hazard Ranking System (HRS) and should have been recommended for no further action. I discussed this with K.D. Pass, who related the information to you.

However, this week received a copy of the actual water line distribution for the area which shows a large residential area (approximately 350 houses) identified as June Park within 3 miles of the Evans Property site that is not served by a public water system. The City of Melbourne Water Department does serve the entire city, but the June Park area, which is southwest of the site, is not considered to be part of the city. June Park is a part of West Melbourne, which is an independent community with its own water system. Although June Park is part of West Melbourne, it is not currently served by the West Melbourne Water Department, but there are plans to extend the water system to that area eventually.

Thus, if the residences in June Park are counted as private wells, the HRS score for the Evans Property site indicates that the original recommendations to conduct Phase II of the site inspection was correct. If you have any further questions, please do not hesitate to contact me.

Very truly yours,

A handwritten signature in cursive script, reading 'Wendy A. Floyd'.

Wendy A. Floyd  
Project Manager

Approved:

A handwritten signature in cursive script, reading 'Robert A. Blackwell'.

WAF/jec

## HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

EVAN'S PROPERTY SLUDGE SITE  
EPA SITE NUMBER FLD980556500  
MELBOURNE  
BREVARD COUNTY, FL  
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY WENDY A. FLOYD  
OF NUS CORPORATION  
ON 11/20/89

DATE OF THIS REPORT: 01/05/90  
DATE OF LAST MODIFICATION: 01/05/90

GROUND WATER ROUTE SCORE : 53.88  
SURFACE WATER ROUTE SCORE: 17.45  
AIR ROUTE SCORE : 0.00

---

MIGRATION SCORE : 32.74

## HRS GROUND WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
DEPTH TO WATER TABLE	13 FEET		
DEPTH TO BOTTOM OF WASTE	0 FEET		
DEPTH TO AQUIFER OF CONCERN	13 FEET	3	6
PRECIPITATION	56.0 INCHES		
EVAPORATION	48.0 INCHES		
NET PRECIPITATION	8.0 INCHES	2	2
PERMEABILITY	1.0X10-6 CM/SEC	1	1
PHYSICAL STATE		3	3
TOTAL ROUTE CHARACTERISTICS SCORE:			12
3. CONTAINMENT		3	3
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE:CADMIUM			18
WASTE QUANTITY CUBIC YDS	2501		
DRUMS	0		
GALLONS	0		
TONS	0		
TOTAL	2501 CU. YDS	8	8
TOTAL WASTE CHARACTERISTICS SCORE:			26
5. TARGETS			
GROUND WATER USE		3	9
DISTANCE TO NEAREST WELL	5200 FEET		
AND	MATRIX VALUE	24	24
TOTAL POPULATION SERVED	1330 PERSONS		
NUMBER OF HOUSES	350		
NUMBER OF PERSONS	0		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		
TOTAL TARGETS SCORE:			33
GROUND WATER ROUTE SCORE (Sgw) = 53.88			

## HRS SURFACE WATER ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
SITE LOCATED IN SURFACE WATER	NO		
SITE WITHIN CLOSED BASIN	NO		
FACILITY SLOPE	0.5 %		
INTERVENING SLOPE	0.9 %	0	0
24-HOUR RAINFALL	4.0 INCHES	3	3
DISTANCE TO DOWN-SLOPE WATER	476 FEET	3	6
PHYSICAL STATE	3		3
TOTAL ROUTE CHARACTERISTICS SCORE:			12
3. CONTAINMENT	3		3
4. WASTE CHARACTERISTICS			
TOXICITY/PERSISTENCE: CADMIUM			18
WASTE QUANTITY	CUBIC YDS	2501	
	DRUMS	0	
	GALLONS	0	
	TONS	0	
TOTAL	2501 CU. YDS	8	8
TOTAL WASTE CHARACTERISTICS SCORE:			26
5. TARGETS			
SURFACE WATER USE		2	6
DISTANCE TO SENSITIVE ENVIRONMENTS		3	6
COASTAL WETLANDS	1516 FEET		
FRESH-WATER WETLANDS	NONE		
CRITICAL HABITAT	8018 FEET		
DISTANCE TO STATIC WATER	> 3 MILES		
DISTANCE TO WATER SUPPLY INTAKE	> 3 MILES		
AND	MATRIX VALUE	0	0
TOTAL POPULATION SERVED	0		
NUMBER OF HOUSES	0		
NUMBER OF PERSONS	0		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		
TOTAL TARGETS SCORE:			12

SURFACE WATER ROUTE SCORE (S<sub>sw</sub>) = 17.45

HRS AIR ROUTE SCORE

<u>CATEGORY/FACTOR</u>	<u>RAW DATA</u>	<u>ASN. VALUE</u>	<u>SCORE</u>
1. OBSERVED RELEASE	NO	0	0

---

2. WASTE CHARACTERISTICS

REACTIVITY:

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS  
DRUMS  
GALLONS  
TONS

TOTAL

MATRIX VALUE

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

---

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

0 to 0.25 mile  
0 to 0.50 mile  
0 to 1.0 mile  
0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS

COASTAL WETLANDS  
FRESH-WATER WETLANDS  
CRITICAL HABITAT

DISTANCE TO LAND USES

COMMERCIAL/INDUSTRIAL  
PARK/FOREST/RESIDENTIAL  
AGRICULTURAL LAND  
PRIME FARMLAND  
HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

N/A

---

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS  
FOR  
SITE: EVAN'S PROPERTY SLUDGE SITE  
AS OF 01/05/90

PAGE 5

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS		12
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	33

$$= 30888 / 57,330 \times 100 = 53.88 = S_{gw}$$

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS		12
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	12

$$= 11232 / 64,350 \times 100 = 17.45 = S_{sw}$$

AIR ROUTE SCORE

$$\text{OBSERVED RELEASE} \quad 0 / 35,100 \times 100 = 0.00 = S_{air}$$

SUMMARY OF MIGRATION SCORE CALCULATIONS

	<u>S</u>	<u>S<sup>2</sup></u>
GROUND WATER ROUTE SCORE ( $S_{gw}$ )	53.88	2903.05
SURFACE WATER ROUTE SCORE ( $S_{sw}$ )	17.45	304.50
AIR ROUTE SCORE ( $S_{air}$ )	0.00	0.00
$S_{gw}^2 + S_{sw}^2 + S_{air}^2$		3207.55
$\sqrt{S_{gw}^2 + S_{sw}^2 + S_{air}^2}$		56.64
$S_M = \sqrt{S_{gw}^2 + S_{sw}^2 + S_{air}^2} / 1.73$		32.74

**TO:** Evan's Property File

**DATE:** January 2, 1990

**FROM:** Wendy A. Floyd, Project Manager

**COPIES:**

**SUBJECT:** Private Wells in Melbourne

Upon receiving the water line maps for the Evans Property area, I was able to determine that there was a large area that was not supplied with water from a public supply system. Until this point, it was my understanding that the entire city of Melbourne was supplied by the public system. The confusion was due to the fact that the June Park area is not considered to be part of the City of Melbourne, but rather is part of West Melbourne, which is considered to be a separate community. West Melbourne has its own water system independent of the City of Melbourne System, although West Melbourne does buy its water from the City of Melbourne, which draws surface water from Lake Washington. Officials from the City of Melbourne thought that June Park was served by the West Melbourne system, but upon calling the West Melbourne Water Department, I established that this area is not served by the West Melbourne system either.



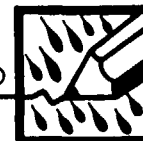
**NUS CORPORATION AND SUBSIDIARIES****TELECON NOTE****CONTROL NO.** F4-8911-24**DATE:** January 2, 1990**TIME:** 16:45**DISTRIBUTION:** Evans Property file**BETWEEN:** David Williams**OF:** City of Melbourne Water and  
Sewer**PHONE:** (407) 727-2900**AND:** Wendy A. Floyd, NUS Corporation**DISCUSSION:**

I called the city of Melbourne Water Department to ask whether public water lines extend into the June Park area of West Melbourne (T28S, R36E, Sec. 1, 2, 11, 12). Mr. Williams informed me that the city of Melbourne water lines extend along Feast Road, Pine Meadow Avenue, and Highway 192 in that area. There are plans being made to extend these lines further west. Most of this area is in West Melbourne, a separate community. There is a West Melbourne Water Department which buys water from the city of Melbourne Water System, and which may have public supply lines in this area.

**NUS CORPORATION AND SUBSIDIARIES****TELECON NOTE****CONTROL NO.** F4-8911-24**DATE:** 1-3-90**TIME:** 8:24**DISTRIBUTION:** Evan's Property File**BETWEEN:****OF:** West Melbourne Water  
Department**PHONE:** (407) 727-3710**AND:** Wendy A. Floyd, NUS Corporation**DISCUSSION:**

I called the West Melbourne Water Department to ask if there were any public water supply lines in the June Park area (T28\$, R36E, Sec. 1, 2, 11, 12). The gentleman I spoke with stated that the West Melbourne system serves only the city of West Melbourne and they do not serve the June Park area.

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**LEVEL**

Notebook No. 311

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F4-1840

*Evan's Property Sludge Site*

*Melbourne / Brevard Co / FL*

*TDD # F4-8911-24*

*Project mgr: Wendy A. Floyd*

LOGBOOK REQUIREMENTS  
REVISED - NOVEMBER 29, 1988

NOTE: ALL LANGUAGE SHOULD BE FACTUAL AND OBJECTIVE

1. Record on front cover of the Logbook: TDD No., Site Name, Site Location, Project Manager.
2. All entries are made using ink. Draw a single line through errors. Initial and date corrections.
3. Statement of Work Plan, Study Plan, and Safety Plan discussion and distribution to field team with team members' signatures.
4. Record weather conditions and general site information.
5. Sign and date each page. Project Manager is to review and sign off on each logbook daily.
6. Document all calibration and pre-operational checks of equipment. Provide serial numbers of equipment used onsite.
7. Provide reference to Sampling Field Sheets for detailed sampling information.
8. Describe sampling locations in detail and document all changes from project planning documents.
9. Provide a site sketch with sample locations and photo locations.
10. Maintain photo log by completing the stamped information at the end of the logbook.
11. If no site representative is on hand to accept the receipt for samples, an entry to that effect must be placed in the logbook.
12. Record I.D. numbers of COC and receipt for sample forms used. Also record numbers of destroyed documents.
13. Complete SMO information in the space provided.

The undersigned have read the work plan for this phase of the site assessment. No study plan or safety plan is generated for off-site recon.

Wendy A. Floyd  
Wendy A. Floyd  
11/14/89

all entries will be made by me, W.A. Floyd, and all photos will be described in the photo log beginning on page 41.

W.A. Floyd 11/14/89

2

Tuesday Nov. 14, 1989

The purpose of this trip is to conduct a property search for the Evans Property Site. The original site boundaries are unclear in the EPA and State file material. Once the site boundaries are established, an off-site recon will be conducted to determine the sampling locations for the sampling trip scheduled for 01/08/90.

10:30 AM Arrived in Melbourne, FL.

74°F Sunny, Clear

Proceed to office of the Melbourne Property Assessor <sup>VP</sup> on 1515 Sarno Road, Brevard County Complex, to meet with Mr. Vince Perry, phone # (407) 242-6502.

10:45 AM Meeting with Mr. Vince Perry

During a preliminary telephone conversation, I had described to Mr. Perry the <sup>general</sup> area of the site, and told him that I was interested in finding who currently owns all the various parcels that make up the Evans Property.

Mr. Perry pulled out the county tax maps for the area. He gave me two (2) copies of the

WA Perry

11/14/89

WA Perry

11/14/89

3

4

airial photos for  
T 285 R 37 E Sec 5 and Sec 6

Mr. Perry also indicated any  
changes in the area (new  
developments) since the photos  
were taken (1985).

The south<sup>west</sup> corner of the  
property, at the corner of  
New Haven and Evans Rd is  
a large commercial building.

The south<sup>east</sup> corner of the  
property, at the corner of (WAP)  
~~New Haven Rd and~~  
has two restaurants on the land,  
Fudchuckers (currently closed  
down), and Caballero's, a  
Mexican Restaurant.

WA Floyd 11/14/89/

There are a few sections of  
land not covered by concrete  
to the west along Evans Rd.

Mr. Perry also provided a copy  
of the plat map for the  
area that indicates land  
parcels.

Together, we went through each  
parcel and recorded the  
current owners.

The 2 sections of cleared land  
along the east side of Evans Rd  
are owned by DeBartolo Corp  
of Youngstown, Ohio. This  
is the company that owns  
Mabbourne Square Mall.

The clear land at the NE corner  
at the intersection of Evans Rd  
& Hibiscus Rd is owned by

WA Floyd 11/14/89/

5

The City of Melbourne.

Refer to plat maps for  
parcel locations:

parcel 269 - 2.49 acres

location of E.F. Hatton Building  
(currently called Skenson, Lehman,  
Hatton) corner of Gateway Dr. & Hibiscus

owner: M.C.C.I

12 Sunbeam Dr., Trumbull CT 06811

- also owns parcel 271

parcel 264 - 50.79 acres

this is the majority of the site  
area and is covered by  
Melbourne Square Mall.

owned by: De Bontela Corp.

WA Floyd 11/14/84/

parcels 270 and 258

owner: Melbourne Corporate Centre LTD

40 Crownx Prop. Inc.

7th Fl. 120 Bloor St. E.

Toronto, Ontario, Canada M4W 1B8

parcels 9, 10, and 3 - 32.19 acres

owner: C.G.W. Company

40 Etling Stations Atty

PO Box 1376

Melbourne, FL 32901-1376

parcel 12

owner: The Second 9-B

Florida Co. LTD

115 East Coast Ave

Hypoluxo, FL 33462

WA Floyd 11/14/84/

Mr Perry indicated that the  
Crane Creek Drainage Ditch  
in the north part of the  
property and the drainage  
lake adjacent to it were  
constructed when De Koster  
Corp bought the property.

Copies of tax maps  
(aerial plot maps / plot maps)  
can be purchased from:  
Melbourne Branch Courthouse  
Clerk of Circuit Court Office  
#50 South Newman Ave  
Melbourne, FL 32935  
Ph: (407) 727-9718  
cost is approx. \$3.00 a sheet

Mr Perry had no knowledge  
of private wells in the  
area.

W A Floyd 1/14/89

12:06 left Property Appraiser's Office  
moved to office of Evans-Butler  
Realty to speak w/ Mr. Hugh Evans Jr.  
[no relation to original owner of  
Evans Property site]

In a previous telephone conversation  
Mr. Evans indicated that he knew  
the area I described well and  
remembered when Evans Property  
was the original pasture where  
the municipal sludge was  
spread

12:37 Meeting with Mr. Hugh Evans

Mr. Evans indicated on aerial photo  
maps the extent of the original  
Evans Property, and the area  
where sludge was spread.

W A Floyd 1/14/89



The Melbourne square Mall was built in 1982/83.

Mr. Evans provided some copies of maps and site maps and a list of the current owners of the various properties.

Mr. Evans also indicated the correct boundary for Evans Property.

The north boundary is the Crane Creek Drainage Ditch.

The property between the ditch and ~~the~~ Hibiscus Rd also did belong to Mr. John Evans the pasture owner but he left that area as natural forest, and no sludge was spread there.

The east boundary is a

row of very tall pine trees ( $\approx 30'$ ) at the east edge of the Mall property.

The west edge of the property is across Evans Rd and marked by another row of tall pine trees.

The south boundary is New Haven Rd.

Mr. Evans stated that the drainage hole on the property may have fish in it, but it is completely fenced and not accessible.

Evans - Batten Realty currently owns property just north of the site across from Hibiscus Rd. Mr. Evans indicated that he

W A Floyd 11/14/89/

W A Floyd 11/14/89/

could grant access to this area for collection of background soil samples.

I asked Mr. Evans about private wells in the area.

He stated that he owned a house (located approx 0.1 mi from the west boundary of the Evans Property) on Brynlynn St. and that everyone in that area is on city water. He knew of no one using a private well for drinking water and ~~did~~ doubted that anyone in the area did.

He did know that the Melbourne Square Mall and the restaurants also on the Evans Property had wells for irrigation.

W.F. Floyd 11/14/89

13:02 leave office; proceed to site

Evans Rd becomes Hollywood Blvd south of New Haven Avenue

13:11 arrived at site

there is not much open land left of the original site.

all of the south boundary is paved over.

The nearest residences are an apartment complex adjacent to the east boundary and a residential area adjacent to the west boundary.

The only open areas are along either side of Evans Rd

W.F. Floyd 11/14/89

and along the north boundary  
of the mall between Crane  
Creek and the mall parking  
lot.

land is very flat and grassy.  
The area on the east side  
of Evans Rd and the north  
edge of the mall has been  
cleared and landscaped.  
The land surface may have  
been changed. Grass and  
trees have been planted.  
The north section has some  
weeds and natural trees  
as well.

There is thick vegetation around  
the drainage ditch.  
The ditch is accessible from  
Gateway Drive.  
No stressed vegetation noted.

W. F. Long 11/14/89

See site sketch for general  
site layout and locations  
of photographs.

West of Evans Rd, the property  
is overgrown with weeds;  
the north portion of this  
strip of land is fenced.  
There is a low, lying marshy area  
here which is ~~the~~ where  
the Crane Creek Drainage Ditch  
flattens out. ~~Water~~ <sup>water</sup> flows  
from this area flows under  
Evans Rd into the drainage  
ditch.  
appears to be covered with  
natural vegetation.

land use: mostly commercial

W. F. Long

11/14/89

14:20 left site to attempt to find a private well in the residential area along the eastern boundary of the site.

Residents interviewed in the area knew of no private wells in the area. City water is available to everyone in the area.

Residents in one area draw surface water for irrigation instead of having irrigation wells.

If no potable wells are found later, water samples may be taken from irrigation wells on the Evans Property site.

W.A. Flanagan

11/14/89

15:00 left area  
no private wells found

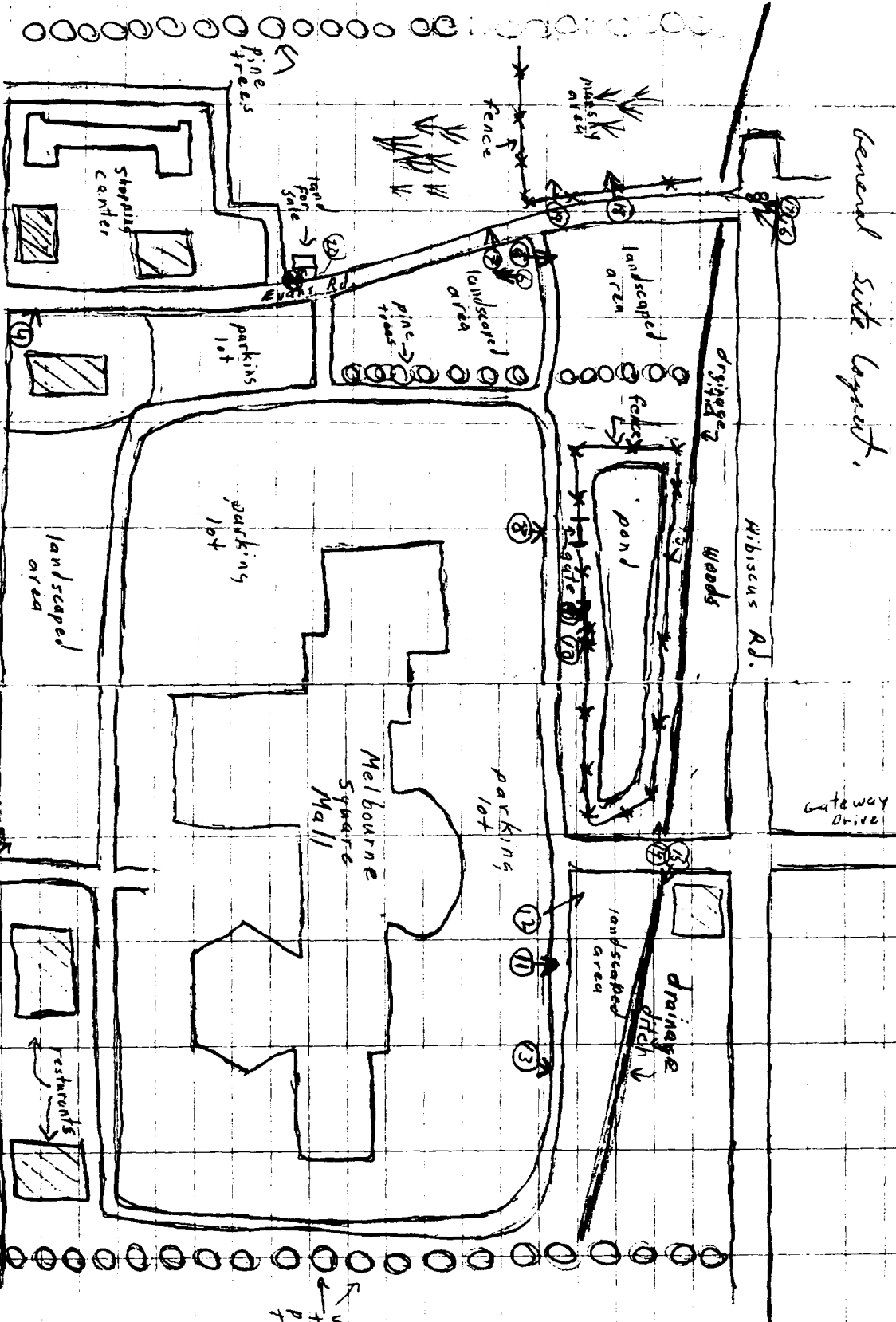
End of Day

11/14/89

Wendy L. Flanagan

site sketch →  
(next page)

General Site Layout.



W.A. Field 11/14/89

W.A. Field 11/14/89

Case No. \_\_\_\_\_

Low Concentration yes/no

Organisms

No

Organisms

Media  
Soil  
WaterMedia  
Soil  
Water

Lab

Lab

Airbill No.

Airbill No.

IDU # F4-8911-24Date 4/14/89 By whom: W. FloydTime: 13:15 # keyed to map: (1)Location: Evans Property SiteLocation: Melbourne, Cleveland CoPicture of: view of SE boundary ofSite, 2 restaurants on SE corner  
of siteIDU # F4-8911-24Date 4/14/89 By whom: W. FloydTime: 13:17 # keyed to map: (2)Location: samePicture of: view of entrance to Mallfrom access for House Rd. S boundary  
of siteIDU # F4-8911-24Date 4/14/89 By whom: W. FloydTime: 13:17 # keyed to map: (3)Location: samePicture of: same as above

100 # F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:18 # keyed to map (4)

Location Evans Property Site

Melbourne, Brevard Co.

Picture of view of southwest corner of site; shopping center

100 # F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:30 # keyed to map (2)

Location Same

Picture of landscaped area northeast of Mall area (property for sale)

100 # F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:30 # keyed to map (6)

Location Same

Picture of landscaped area east of Mall area (looking south) Evans Rd to the right

100 #

F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:35 # keyed to map (8)

Location Evans Property Site

Melbourne, Brevard Co.

Picture of west boundary of site; wooded, low lying area

100 #

F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:40 # keyed to map (8)

Location Same

Picture of fence surrounding drainage pond

100 #

F4-8911-24

Date 11/14/89 By Whom: W. Floyd

Time 13:40 # keyed to map (9)

Location Same

Picture of drainage pond north of Mall area

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:41 # keyed to map: (10)  
 Location Evans Property Site  
Wellbourne, Brevard Co  
 Picture of: Drainage pond north  
of Mall area

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:42 # keyed to map: (11)  
 Location same  
 Picture of: landscaped area along  
Northwest boundary of site

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:42 # keyed to map: (12)  
 Location same  
 Picture of: landscaped area along  
North boundary of site

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:43 # keyed to map: (13)  
 Location Evans Property Site  
Wellbourne, Brevard Co.  
 Picture of: landscaped area in  
North east corner of site

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:50 # keyed to map: (14)  
 Location same  
 Picture of: Crook Creek drainage  
ditch, looking west

ID# F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 13:50 # keyed to map: (15)  
 Location same  
 Picture of: Crook Creek drainage  
ditch, looking east



100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:00 # keyed to map (18)  
 Location Evans Property site  
Malbourne, Brevard Co  
 Picture of Northwest corner  
of site

100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:00 # keyed to map (17)  
 Location Same  
 Picture of Western end of site, corner  
of Evans Rd & Hibiscus Rd

100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:04 # keyed to map (18)  
 Location same  
 Picture of wooded area of site;  
West of Evans Rd

100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:04 # keyed to map (19)  
 Location Evans Property site  
Malbourne, Brevard Co  
 Picture of wooded area west of  
Evans Rd

100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:06 # keyed to map (20)  
 Location Same  
 Picture of undeveloped area for sale  
west of Evans Rd

100 # F4-8911-24  
 Date 11/14/89 By Whom W. Floyd  
 Time 14:04 # keyed to map (18)  
 Location same  
 Picture of wooded area of site;  
West of Evans Rd

CONVERSATION RECORD

Date: 12/22/88

File Name: Melbourne Sludge Sites

Time: 2:30 PM

Contact Person: Bud Timmons

Phone No.: (Suncom) 367-1515

By: Brian M. Moore

Subject: Closest wells

---

Bud Timmons relayed the following information to me regarding closest wells which he found in his USGS well inventory file.

The closest well, within 2 miles of sites 1, 5, (6) 7 & 8 is a 68 foot deep, 1½" domestic and irrigation well owned by Bertha West located at 719 Nevada St., Melbourne 32904. USGS # - 2803 8040 .003. Case depth is 64 feet. The well is section 12 near Minton's Corner.

Bud Timmons stated and the Melbourne Water Billing Dept. confirmed that the new development on Willowood Dr. adjacent to Mosier's Property is not connected to city water. Recently drilled potable wells in this area are assumed to be in the shallow aquifer.

Bud Timmons also stated that within the degree/minute - 2808 8041 there are 100 wells, 48 of which are shallow, of which 42 are domestic. In the degree/minute 2809 8041 there are 143 wells, of which 56 are shallow, of which 49 are domestic.

Note: The maps sent by Bud Timmons were used to make the map - Reference 6.

site 6 = Evan's Property Site

EVAN'S PROPERTY SLUDGE SITE (SITE #6)  
AKA: JOHN EVAN'S PROPERTY  
FLD 980556500  
PRELIMINARY ASSESSMENT REASSESSMENT

- A. SITE DESCRIPTION. The Evan's Property Site (Site #6) was 148 acres of → pasture land owned by Mr. John Evans. The site included most of the NW 1/4 of Sec. 5, Township 28 S. Range 37 E. and apparently extended west into Section 6, (500 ft.+) [3]. Presently the site is divided into several parcels, the largest is owned by Melbourne/JCP Associates and is the site of the Melbourne Square Mall. A parcel along the east side of Evan's Road is being advertised for sale by Evans-Butler Realty. Both sides of Evan's Road in this area are presently undeveloped. The site lies in Melbourne, Brevard County, Florida. The Crane Creek Drainage Ditch runs along the north border of the site [17]. This site accepted municipal sludge which was contaminated with electroplating wastes. The site accepted sludge from 1965 to 1979 (Figs. 1,2) [3,15].
- B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. Evan's Property is one of 8 sites where the City of Melbourne disposed of digested municipal sludge from the D. B. Lee and Grant Street wastewater treatment plants by landspreading [3,15]. McClenon's Property (Site #3) had a Preliminary Assessment (PA) written in 1987 [16]. The other 7 sites had PAs written in 1982 which were unobtainable [3].

The City of Melbourne provided sludge quality analysis data for both treatment plants for the period of 8/84 through 7/88. No data was found for the period landspreading (1965-1979). Analyses from the D. B. Lee Plant in 1984 listed metals values as high as: Cadmium--10 mg/kg, Copper--4799 mg/kg, Lead-- 598 mg/kg, Nickel--548 mg/kg, and Zinc--1216 mg/kg [15]. Chromium was also noted in the original Notification of Hazardous Waste Site form which was sent to EPA by the City [3], and is reportedly used by FAR-MAC Plating Co. [15,20]. The City reported in 12/88 that Advanced Board Circuitries contributed copper to the D. B. Lee Plant, while FAR-MAC Plating contributed nickel to the Grant St. plant during the period of operation [15].

In an FDER inspection report of Advanced Board Circuitries from 12/17/81, the District inspector noted ". . . concern regarding the metals (Copper--5 ppm and Lead--2 ppm) being discharged into the sanitary sewer". The discharge rate was noted at 300 gallons of water per minute [19].

A 1984 FDER report noted that FAR-MAC Plating's chrome and nickel plating operation generates copper cyanide, chromium, and nickel waste that is recycled. The continuous flow chrome rinse had been replaced by a recycled rinse in 1983-84. The continuous flow rinse for nickel was still in use [20].

All of the above listed metals plus cyanide and various organic compounds are commonly found in the waste streams of electroplating processes [5]. Chromium and cyanide were not included in the sludge analyses of the 2 treatment plants [15]. These metals could contaminate

the air, soil, water, and in some cases could enter the human food chain. Metals incorporated in the sludge can have detrimental effects which limit the amount of sludge which can be applied to cropland or on areas of unrestricted human access. Data indicate that sludge containing lead, when applied to cropland, may increase the lead concentration in crops grown on acid soils [5].

No groundwater or soil samples are known to have been collected from the site to date.

- C. RCRA STATUS. This site has no RCRA status.
- D. NATURE OF HAZARDOUS MATERIALS. Copper is toxic in low concentrations to many aquatic organisms [13] and can cause Wilson's disease in persons with this recessive genetic trait. The primary route of entry for copper is inhalation [7]. Nickel is a human skin sensitizer. Nickel compounds taken in by inhalation and ingestion have been linked to cancers [7]. Chromium compounds and lead are known and suspected carcinogens and are used in the electroplating industry [4,5]. Hexavalent chromium is corrosive and a potent human skin sensitizer [4,5,12]. Lead is bioaccumulative, toxic and persistent [4,5,7]. Cyanide, a common component of electroplating wastewaters, has toxic effects on the liver and kidneys [5,12].
- E. ROUTES OF CONTAMINATION. Groundwater and surface water are potential routes of contamination. Direct contact is another potential route.
- F. POSSIBLE AFFECTED POPULATION AND RESOURCES. A surficial aquifer system, consisting of unconsolidated sediments of upper Miocene to Holocene Age, exists in this area of Brevard County. It contains the water table (13 feet below land surface) and water within it is under mainly unconfined conditions; but beds of low permeability may cause semiconfined conditions in its deeper parts. The aquifer is composed of fine to medium sand, coquina (limerock), sandy shell marl, gray to greenish clay and silty shell. The aquifer consists of two zones (water table zone and shallow rock zone) that act as a single permeable hydrogeologic unit. The shallow rock zone of the aquifer, which overlies the Hawthorn Formation, is composed of limestone and found approximately 80 feet bls in this area. The surficial aquifer is tapped by many municipal, public, and private systems for potable water supplies. The larger systems tap the shallow rock zone of the surficial aquifer [1,2,21,23].

The Floridan aquifer, a thick sequence of carbonates (limestones and dolomites), is found approximately 250 feet bls. The Floridan exists under confined (artesian) conditions in Brevard County. Due to the Floridan's high chloride content (>250 mg/l), this aquifer is used primarily for irrigation and stock watering [1,2,21,23].

Evan's Property  
AKA: John Evan's Property  
FLD980556500  
Preliminary Assessment Reassessment  
Page Three

The City of Palm Bay's Port Malabar Well Field taps the surficial aquifer with casing depths from 50 to 90 feet. This well field serves 11,808 connections, but is greater than 4 miles from the site [6,9]. There are approximately 540 private wells within 3 miles of the site which tap the surficial aquifer and are outside of municipal service areas [22]. The City of Melbourne takes its water from Lake Washington. The intakes are more than 4 miles from the sludge site [6,8]. The closest potable well is less than 1 mile from the site [6,22].

The Crane Creek Drainage Ditch crosses Evan's Road about 100 feet south of Hibiscus Blvd. This ditch flows into Crane Creek which flows into the Indian River approximately 4 miles from the site. Brevard County is home to several endangered and threatened species. Some of the birds (Woodstork, etc.) are known to inhabit the Crane Creek area. The Indian River is Critical Habitat for the West Indian Manatee [26]. Copper and several other electroplating waste components have potential toxic effects on freshwater and saltwater organisms [5,12,13].

- G. RECOMMENDATIONS AND JUSTIFICATIONS. No groundwater or soil samples have been collected to date. Highly toxic and potentially carcinogenic contaminants may be present at the site. We recommend that soil and groundwater samples be collected and analyzed for priority pollutant contaminants.

Since highly toxic/persistent contaminants may be present at the site, a shallow unconfined aquifer exists, several endangered species are nearby, and numerous private wells are present nearby, we recommend a medium priority for CERCLA Site Screening Investigation.

EPA		POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT REASSESSMENT PART 1 - SITE INFORMATION AND ASSESSMENT				IDENTIFICATION 01 STATE 02 SITE NUMBER FL D 980556500		
II. SITE NAME AND LOCATION								
01 SITE NAME (Legal, common or descriptive name of site) Evan's Property Sludge Site (Site #6)				02 STREET, ROUTE NO., OR SPECIFIC LOCATION IDENTIFIER 128S, R37E, S5, NW 1/4. East of Hollywood Blvd. (Evans Rd.), North of New Haven Ave.				
03 CITY Melbourne (Figs. 1,2) [3,15,17]				04 STATE FL	05 ZIP CODE 32901	06 COUNTY Brevard	07 COUNTY CODE 09	08 CONG DIST 11
09 COORDINATES		LATITUDE 28°04'56" N		LONGITUDE 80°39'08" W [6]				
10 DIRECTIONS TO SITE (Starting from nearest public road): The site is in the N.E. corner of New Haven Ave. and Hollywood Blvd. (Figs. 1,2) [3,14].								
RESPONSIBLE PARTIES								
01 OWNER (If known) City of Melbourne/John Evans				02 STREET (Business, mailing, residential) 900 East Strawbridge Ave.				
03 CITY Melbourne				04 STATE FL	05 ZIP CODE 32901	06 TELEPHONE NUMBER (407) 727-2900		
07 OPERATOR (If known and different from owner) City of Melbourne [3]				08 STREET (Business, mailing, residential) 900 East Strawbridge Ave.				
09 CITY Melbourne				10 STATE FL	11 ZIP CODE 32901	12 TELEPHONE NUMBER (407) 727-2900		
13 TYPE OF OWNERSHIP (Check one) <input type="checkbox"/> A. PRIVATE <input type="checkbox"/> B. FEDERAL: _____ Agency Name <input type="checkbox"/> C. STATE <input type="checkbox"/> D. COUNTY <input checked="" type="checkbox"/> E. MUNICIPAL <input type="checkbox"/> F. OTHER: _____ (Specify) <input type="checkbox"/> G. UNKNOWN								
14 OWNER/OPERATOR NOTIFICATION ON FILE (Check all that apply) <input type="checkbox"/> A. RCRA 3001 DATE RECEIVED: _____ MONTH DAY YEAR <input checked="" type="checkbox"/> B. UNCONTROLLED WASTE SITE (CERCLA 103 c) DATE RECEIVED: 6 / 5 / 81 <input type="checkbox"/> C. NONE								
IV. CHARACTERIZATION OF POTENTIAL HAZARD								
01 ON SITE INSPECTION BY (Check all that apply) <input checked="" type="checkbox"/> YES DATE 09 / 22 / 88 MONTH/DAY/YEAR <input type="checkbox"/> A. EPA <input type="checkbox"/> B. EPA CONTRACTOR <input checked="" type="checkbox"/> C. STATE <input type="checkbox"/> D. OTHER CONTRACTOR <input type="checkbox"/> NO [14] <input type="checkbox"/> E. LOCAL HEALTH OFFICIAL <input type="checkbox"/> OTHER: _____ (Specify) CONTRACTOR NAME(S): _____								
02 SITE STATUS (Check one) <input type="checkbox"/> A. ACTIVE <input checked="" type="checkbox"/> B. INACTIVE <input type="checkbox"/> C. UNKNOWN [3]				03 YEARS OF OPERATION 1965    1979 [3]    UNKNOWN BEGINNING YEAR    ENDING YEAR				
04 DESCRIPTION OF SUBSTANCES POSSIBLY PRESENT, KNOWN, OR ALLEGED-- The City of Melbourne landspread digested municipal sludge containing electroplating wastes at this site. Heavy metals, present in significant quantities, have been found in the digested sludge [3,15,20].								
05 DESCRIPTION OF POTENTIAL HAZARD TO ENVIRONMENT AND/OR POPULATION--Heavy metals (cadmium, chromium) found in the electroplating sludge are highly toxic and known or suspected carcinogens. There are numerous wells which tap the unconfined surficial aquifer near the site. Residents using these wells and people traversing the area may be exposed to highly toxic and carcinogenic substances [3-5,6,7,12,22].								
V. PRIORITY ASSESSMENT								
01 PRIORITY FOR INSPECTION (Check one. If high or medium is checked, complete Part 3-Description of Conditions) <input type="checkbox"/> A. HIGH (Inspection required promptly) <input checked="" type="checkbox"/> B. MEDIUM (Inspection Required) <input type="checkbox"/> C. LOW (Inspect on time available basis) <input type="checkbox"/> D. NONE (No further action needed, complete disposition form)								
VI. INFORMATION AVAILABLE FROM								
01 Contact Eric S. Nuzie <i>Eric Nuzie</i>		02 OF (Agency Organization) FDER/BWC		03 Telephone Number (904) 488-0190				
04 Person Responsible for Assessment Brian Moore		05 Agency FDER	06 Organization BWC	07 Tel. No. (904) 488-0190	08 Date 12 / 21 / 88 Mo. DAY YEAR			

**OVERSIZED**

**DOCUMENT**

## HAZARD DRINKING SYSTEM SCORING SUMMARY

FOR

EVAN'S PROPERTY (SITE # 6)  
EPA SITE NUMBER FLD980556500  
MELBOURNE  
BREVARD COUNTY, FL  
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY BRIAN MOORE  
OF FDER  
ON 12/28/88

DATE OF THIS REPORT: 01/01/89  
DATE OF LAST MODIFICATION: 01/01/89

GROUND WATER ROUTE SCORE : 58.37  
SURFACE WATER ROUTE SCORE: 17.45  
AIR ROUTE SCORE : 0.00

MIGRATION SCORE : ~~35.81~~

*The site was NFRAP based on the results of the  
Melbourne Regional Airport SI and a recon of the area.*



AND	MATRIX VALUE	24	24
TOTAL POPULATION SERVED	2052 PERSONS		
NUMBER OF HOUSES	540		
NUMBER OF PERSONS	10		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		

TOTAL TARGETS SCORE: 33

GROUND WATER ROUTE SCORE (Sgw) = 58.37

SITE: EVAN'S PROPERTY (SITE # 6)

PAG

HRS SURFACE WATER ROUTE SCORE Crane Creek/Ditch

CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. ROUTE CHARACTERISTICS			
SITE LOCATED IN SURFACE WATER	NO		
SITE WITHIN CLOSED BASIN	NO		
Ref.6 FACILITY SLOPE	0.5 %		
INTERVENING SLOPE	0.5 %	0	0
Ref.24 24-HOUR RAINFALL	4.0 INCHES	3	3
Ref. 6 DISTANCE TO DOWN-SLOPE WATER	476 FEET	3	6
PHYSICAL STATE (Sludge)		3	3
TOTAL ROUTE CHARACTERISTICS SCORE:			12
3. CONTAINMENT (pile uncovered, no liner/diking)			3
4. WASTE CHARACTERISTICS			

Refs.3,15,20 TOXICITY/PERSISTENCE:CADMIUM 16

Ref. 25	WASTE QUANTITY	CUBIC YDS	2501(assume maximum quantity)		
		DRUMS	0		
		GALLONS	0		
		TONS	0		
	TOTAL	2501 CU. YDS	8		8
	TOTAL WASTE CHARACTERISTICS SCORE:				26

5. TARGETS

Ref. 6	SURFACE WATER USE	2	6
	DISTANCE TO SENSITIVE ENVIRONMENTS	3	6

SITE: EVAN'S PROPERTY (SITE # 6)

PAGE

HRS GROUND WATER ROUTE SCORE - Surficial aquifer

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
	1. OBSERVED RELEASE	NO	0	0
	2. ROUTE CHARACTERISTICS			
Refs, 1, 6, 21, 23,	DEPTH TO WATER TABLE	10 FEET		
	DEPTH TO BOTTOM OF WASTE	0 FEET		
	DEPTH TO AQUIFER OF CONCERN	10 FEET	3	6
Ref, 24	PRECIPITATION	25.0 INCHES		
	EVAPORATION	48.0 INCHES		
	NET PRECIPITATION	8.0 INCHES	2	
Refs, 1, 6, 21, 23,	PERMEABILITY	$1.0 \times 10^{-4}$ CM/SEC	2	2
	PHYSICAL STATE (Sludge)		3	3
	TOTAL ROUTE CHARACTERISTICS SCORE:			10
Refs, 2, 3, 15	3. CONTAINMENT (pile uncovered, no liner)		3	3
	4. WASTE CHARACTERISTICS			
Refs, 3, 15, 20	TOXICITY/PERSISTENCE: CADMIUM			18
Ref, 25	WASTE QUANTITY CUBIC YDS	2501 (assume maximum quantity)		
	DRUMS	0		
	GALLONS	0		
	TONS	0		
	TOTAL	2501 CU. YDS	8	8
	TOTAL WASTE CHARACTERISTICS SCORE:			26
	5. TARGETS			
			2	4

DISTANCE TO STATIC WATER	> 3 MILES		
DISTANCE TO WATER SUPPLY INTAKE	> 3 MILES		
AND	MATRIX VALUE	0	0
TOTAL POPULATION SERVED	0		
NUMBER OF HOUSES	0		
NUMBER OF PERSONS	0		
NUMBER OF CONNECTIONS	0		
NUMBER OF IRRIGATED ACRES	0		

TOTAL TARGETS SCORE:

12

SURFACE WATER ROUTE SCORE (SSW) = 17.45

SITE: EVAN'S PROPERTY (SITE # 0)

PAGE 1

AIR ROUTE SCORE

CATEGORY/FACTOR	RAW DATA	ALV. VALUE	SCORE
1. OBSERVED RELEASE	NO	0	0
2. WASTE CHARACTERISTICS			

REACTIVITY:

MATRIX VALUE

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS  
 DRUMS  
 GALLONS  
 TONS

TOTAL

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

### 3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

0 to 0.25 mile  
 0 to 0.50 mile  
 0 to 1.0 mile  
 0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS

COASTAL WETLANDS  
 FRESH-WATER WETLANDS  
 CRITICAL HABITAT

DISTANCE TO LAND USES

COMMERCIAL/INDUSTRIAL  
 PARK/FOREST/RESIDENTIAL  
 AGRICULTURAL LAND  
 PRIME FARMLAND

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS  
FOR  
SITE: EVAN'S PROPERTY (SITE # 6)  
AS OF 01/01/80

PAGE

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS 13  
CONTAINMENT X 3  
WASTE CHARACTERISTICS X 26  
TARGETS X 33

$$= 33462 / 57,350 \times 100 = 58.37 = S1gw$$

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS 12  
CONTAINMENT X 3  
WASTE CHARACTERISTICS X 26  
TARGETS X 12

$$= 11232 / 64,050 \times 100 = 17.45 = S1sw$$

AIR ROUTE SCORE

$$\text{OBSERVED RELEASE} \quad 0 / 35,100 \times 100 = 0.00 = S1air$$

SUMMARY OF MIGRATION SCORE CALCULATIONS

	<u>S</u>	<u>SO2</u>
GROUND WATER ROUTE SCORE (S1gw)	58.37	3407.06
SURFACE WATER ROUTE SCORE (S1sw)	17.45	304.50

$J (S021gw + S021sw + S021air)$

60.9

$S1M = J (S021gw + S021sw + S021air) / 1.73$

35.21

## HAZARD RANKING SYSTEM SCORING SUMMARY

FOR

EVAN'S PROPERTY (SITE # 6)  
EPA SITE NUMBER FLD980556500  
MELBOURNE  
BREVARD COUNTY, FL  
EPA REGION: 4

SCORE STATUS: IN PREPARATION

SCORED BY BRIAN MOORE  
OF FDER  
ON 12/28/88

DATE OF THIS REPORT: 01/01/80  
DATE OF LAST MODIFICATION: 01/01/80

GROUND WATER ROUTE SCORE :	58.37
SURFACE WATER ROUTE SCORE:	17.45
AIR ROUTE SCORE :	0.00
<hr/>	
MIGRATION SCORE :	35.21

## HRS GROUND WATER ROUTE SCORE, surficial aquifer

CATEGORY/FACTOR		RAW DATA	ASN. VALUE	SCORE
1. OBSERVED RELEASE		NO	0	0
2. ROUTE CHARACTERISTICS				
Refs, 1, 6, 21, 23,	DEPTH TO WATER TABLE	13 FEET		
	DEPTH TO BOTTOM OF WASTE	0 FEET		
	DEPTH TO AQUIFER OF CONCERN	13 FEET	3	6
Ref, 24	PRECIPITATION	56.0 INCHES		
	EVAPORATION	48.0 INCHES		
	NET PRECIPITATION	8.0 INCHES	2	2
Refs, 1, 6, 21, 23,	PERMEABILITY	$1.0 \times 10^{-4}$ CM/SEC	2	2
	PHYSICAL STATE (sludge)		3	3
	TOTAL ROUTE CHARACTERISTICS SCORE:			13
Refs, 2, 3, 15	3. CONTAINMENT (pile uncovered, no liner)		3	3
4. WASTE CHARACTERISTICS				
Refs, 3, 15, 20	TOXICITY/PERSISTENCE: CADMIUM			18
Ref, 25	WASTE QUANTITY CUBIC YDS	2501 (assume maximum quantity)		
	DRUMS	0		
	GALLONS	0		
	TONS	0		
	TOTAL	2501 CU. YDS	8	8
	TOTAL WASTE CHARACTERISTICS SCORE:			26
5. TARGETS				
Refs, 2, 6, 21, 22, 23	GROUND WATER USE		3	9
Refs. 22	DISTANCE TO NEAREST WELL	5160 FEET		
	AND	MATRIX VALUE	24	24
	TOTAL POPULATION SERVED	2052 PERSONS		
	NUMBER OF HOUSES	540		
	NUMBER OF PERSONS	0		
	NUMBER OF CONNECTIONS	0		
	NUMBER OF IRRIGATED ACRES	0		
	TOTAL TARGETS SCORE:			33
GROUND WATER ROUTE SCORE (Sgw) = 58.37				

## HRS SURFACE WATER ROUTE SCORE Crane Creek/Ditch

	CATEGORY/FACTOR	RAW DATA	ASN. VALUE	SCORE
	1. OBSERVED RELEASE	NO	0	0
	2. ROUTE CHARACTERISTICS			
	SITE LOCATED IN SURFACE WATER	NO		
	SITE WITHIN CLOSED BASIN	NO		
Ref. 6	FACILITY SLOPE	0.5 %		
	INTERVENING SLOPE	0.9 %	0	0
Ref. 24	24-HOUR RAINFALL	4.0 INCHES	3	3
Ref. 6	DISTANCE TO DOWN-SLOPE WATER	476 FEET	3	6
	PHYSICAL STATE (sludge)	3		3
	TOTAL ROUTE CHARACTERISTICS SCORE:			12
	3. CONTAINMENT (pile uncovered, no liner/diking)			3
	4. WASTE CHARACTERISTICS			
Refs. 3, 15, 20	TOXICITY/PERSISTENCE: CADMIUM			18
Ref. 25	WASTE QUANTITY	CUBIC YDS	2501 (assume maximum quantity)	
		DRUMS	0	
		GALLONS	0	
		TONS	0	
	TOTAL	2501 CU. YDS	8	8
	TOTAL WASTE CHARACTERISTICS SCORE:			26
	5. TARGETS			
Ref. 6	SURFACE WATER USE		2	6
	DISTANCE TO SENSITIVE ENVIRONMENTS		3	6
Ref. 6	COASTAL WETLANDS	1516 FEET		
	FRESH-WATER WETLANDS	NONE		
Ref. 6	CRITICAL HABITAT	8018 FEET		
	DISTANCE TO STATIC WATER	> 3 MILES		
	DISTANCE TO WATER SUPPLY INTAKE	> 3 MILES		
	AND	MATRIX VALUE	0	0
	TOTAL POPULATION SERVED	0		
	NUMBER OF HOUSES	0		
	NUMBER OF PERSONS	0		
	NUMBER OF CONNECTIONS	0		
	NUMBER OF IRRIGATED ACRES	0		
	TOTAL TARGETS SCORE:			12

SURFACE WATER ROUTE SCORE (S<sub>sw</sub>) = 17.45



HRS AIR ROUTE SCORE

<u>CATEGORY/FACTOR</u>	<u>RAW DATA</u>	<u>ASN. VALUE</u>	<u>SCORE</u>
1. OBSERVED RELEASE	NO	0	0

---

2. WASTE CHARACTERISTICS

REACTIVITY:

INCOMPATIBILITY

TOXICITY

WASTE QUANTITY CUBIC YARDS  
DRUMS  
GALLONS  
TONS

TOTAL

MATRIX VALUE

TOTAL WASTE CHARACTERISTICS SCORE:

N/A

---

3. TARGETS

POPULATION WITHIN 4-MILE RADIUS

0 to 0.25 mile

0 to 0.50 mile

0 to 1.0 mile

0 to 4.0 miles

DISTANCE TO SENSITIVE ENVIRONMENTS

COASTAL WETLANDS

FRESH-WATER WETLANDS

CRITICAL HABITAT

DISTANCE TO LAND USES

COMMERCIAL/INDUSTRIAL

PARK/FOREST/RESIDENTIAL

AGRICULTURAL LAND

PRIME FARMLAND

HISTORIC SITE WITHIN VIEW?

TOTAL TARGETS SCORE:

N/A

---

AIR ROUTE SCORE (Sa) = 0.00

HAZARD RANKING SYSTEM SCORING CALCULATIONS  
FOR

PAGE 5

SITE: EVAN'S PROPERTY (SITE # 6)  
AS OF 01/01/80

GROUND WATER ROUTE SCORE

ROUTE CHARACTERISTICS		13
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	33

$$= 33462 / 57,330 \times 100 = 58.37 = S_{1gw}$$

SURFACE WATER ROUTE SCORE

ROUTE CHARACTERISTICS		12
CONTAINMENT	X	3
WASTE CHARACTERISTICS	X	26
TARGETS	X	12

$$= 11232 / 64,350 \times 100 = 17.45 = S_{1sw}$$

AIR ROUTE SCORE

$$OBSERVED RELEASE \quad 0 / 35,100 \times 100 = 0.00 = S_{1air}$$

SUMMARY OF MIGRATION SCORE CALCULATIONS

	<u>S</u>	<u>S02</u>
GROUND WATER ROUTE SCORE (S <sub>1gw</sub> )	58.37	3407.06
SURFACE WATER ROUTE SCORE (S <sub>1sw</sub> )	17.45	304.50
AIR ROUTE SCORE (S <sub>1air</sub> )	0.00	0.00
S02 <sub>1gw</sub> + S02 <sub>1sw</sub> + S02 <sub>1air</sub>		3711.56
√ (S02 <sub>1gw</sub> + S02 <sub>1sw</sub> + S02 <sub>1air</sub> )		60.92
S <sub>1M</sub> = √ (S02 <sub>1gw</sub> + S02 <sub>1sw</sub> + S02 <sub>1air</sub> ) / 1.73		35.21

EVAN'S PROPERTY SLUDGE SITE (SITE #6)  
AKA: JOHN EVAN'S PROPERTY  
FLD 980556500  
PRELIMINARY ASSESSMENT REASSESSMENT

10/4/89  
Accepted  
Will evaluate  
need for SSI  
NFRAP  
12-17-91

- A. SITE DESCRIPTION. The Evan's Property Site (Site #6) was 148 acres of pasture land owned by Mr. John Evans. The site included most of the NW 1/4 of Sec. 5, Township 28 S. Range 37 E. and apparently extended west into Section 6, (500 ft.+) [3]. Presently the site is divided into several parcels, the largest is owned by Melbourne/JCP Associates and is the site of the Melbourne Square Mall. A parcel along the east side of Evan's Road is being advertised for sale by Evans-Butler Realty. Both sides of Evan's Road in this area are presently undeveloped. The site lies in Melbourne, Brevard County, Florida. The Crane Creek Drainage Ditch runs along the north border of the site [17]. This site accepted municipal sludge which was contaminated with electroplating wastes. The site accepted sludge from 1965 to 1979 (Figs. 1,2) [3,15].
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A 1984 FDER report noted that FAR-MAC Plating's chrome and nickel plating operation generates copper cyanide, chromium, and nickel waste that is recycled. The continuous flow chrome rinse had been replaced by a recycled rinse in 1983-84. The continuous flow rinse for nickel was still in use [20].

All of the above listed metals plus cyanide and various organic compounds are commonly found in the waste streams of electroplating processes [5]. Chromium and cyanide were not included in the sludge analyses of the 2 treatment plants [15]. These metals could contaminate

the air, soil, water, and in some cases could enter the human food chain. Metals incorporated in the sludge can have detrimental effects which limit the amount of sludge which can be applied to cropland or on areas of unrestricted human access. Data indicate that sludge containing lead, when applied to cropland, may increase the lead concentration in crops grown on acid soils [5].

No groundwater or soil samples are known to have been collected from the site to date.

- C. RCRA STATUS. This site has no RCRA status.
- D. NATURE OF HAZARDOUS MATERIALS. Copper is toxic in low concentrations to many aquatic organisms [13] and can cause Wilson's disease in persons with this recessive genetic trait. The primary route of entry for copper is inhalation [7]. Nickel is a human skin sensitizer. Nickel compounds taken in by inhalation and ingestion have been linked to cancers [7]. Chromium compounds and lead are known and suspected carcinogens and are used in the electroplating industry [4,5]. Hexavalent chromium is corrosive and a potent human skin sensitizer [4,5,12]. Lead is bioaccumulative, toxic and persistent [4,5,7]. Cyanide, a common component of electroplating wastewaters, has toxic effects on the liver and kidneys [5,12].
- E. ROUTES OF CONTAMINATION. Groundwater and surface water are potential routes of contamination. Direct contact is another potential route.
- F. POSSIBLE AFFECTED POPULATION AND RESOURCES. A surficial aquifer system, consisting of unconsolidated sediments of upper Miocene to Holocene Age, exists in this area of Brevard County. It contains the water table (13 feet below land surface) and water within it is under mainly unconfined conditions; but beds of low permeability may cause semiconfined conditions in its deeper parts. The aquifer is composed of fine to medium sand, coquina (limerock), sandy shell marl, gray to greenish clay and silty shell. The aquifer consists of two zones (water table zone and shallow rock zone) that act as a single permeable hydrogeologic unit. The shallow rock zone of the aquifer, which overlies the Hawthorn Formation, is composed of limestone and found approximately 80 feet bls in this area. The surficial aquifer is tapped by many municipal, public, and private systems for potable water supplies. The larger systems tap the shallow rock zone of the surficial aquifer [1,2,21,23].

The Floridan aquifer, a thick sequence of carbonates (limestones and dolomites), is found approximately 250 feet bls. The Floridan exists under confined (artesian) conditions in Brevard County. Due to the Floridan's high chloride content (>250 mg/l), this aquifer is used primarily for irrigation and stock watering [1,2,21,23].

The City of Palm Bay's Port Malabar Well Field taps the surficial aquifer with casing depths from 50 to 90 feet. This well field serves 11,808 connections, but is greater than 4 miles from the site [6,9]. There are approximately 540 private wells within 3 miles of the site which tap the surficial aquifer and are outside of municipal service areas [22]. The City of Melbourne takes its water from Lake Washington. The intakes are more than 4 miles from the sludge site [6,8]. The closest potable well is less than 1 mile from the site [6,22].

The Crane Creek Drainage Ditch crosses Evan's Road about 100 feet south of Hibiscus Blvd. This ditch flows into Crane Creek which flows into the Indian River approximately 4 miles from the site. Brevard County is home to several endangered and threatened species. Some of the birds (Woodstork, etc.) are known to inhabit the Crane Creek area. The Indian River is Critical Habitat for the West Indian Manatee [26]. Copper and several other electroplating waste components have potential toxic effects on freshwater and saltwater organisms [5,12,13].

- G. RECOMMENDATIONS AND JUSTIFICATIONS. No groundwater or soil samples have been collected to date. Highly toxic and potentially carcinogenic contaminants may be present at the site. We recommend that soil and groundwater samples be collected and analyzed for priority pollutant contaminants.

Since highly toxic/persistent contaminants may be present at the site, a shallow unconfined aquifer exists, several endangered species are nearby, and numerous private wells are present nearby, we recommend a medium priority for CERCLA Site Screening Investigation.

ATTACHMENT A  
SITE INSPECTION SUMMARY

FLD 980556500

SITE NAME: EVAN'S PROPERTY (Site #6)

AKA: JOHN EVAN'S PROPERTY

Date (Agency)	Sample Type	ANALYSIS				Comments:
		VOC	SVOC	P/P	MET	
09/22/88 (FDER)						On-site reconnaissance inspection identified probable site owner and verified location of the site [14].

Key: Agency

FDER = Florida Department of Environmental Regulation.

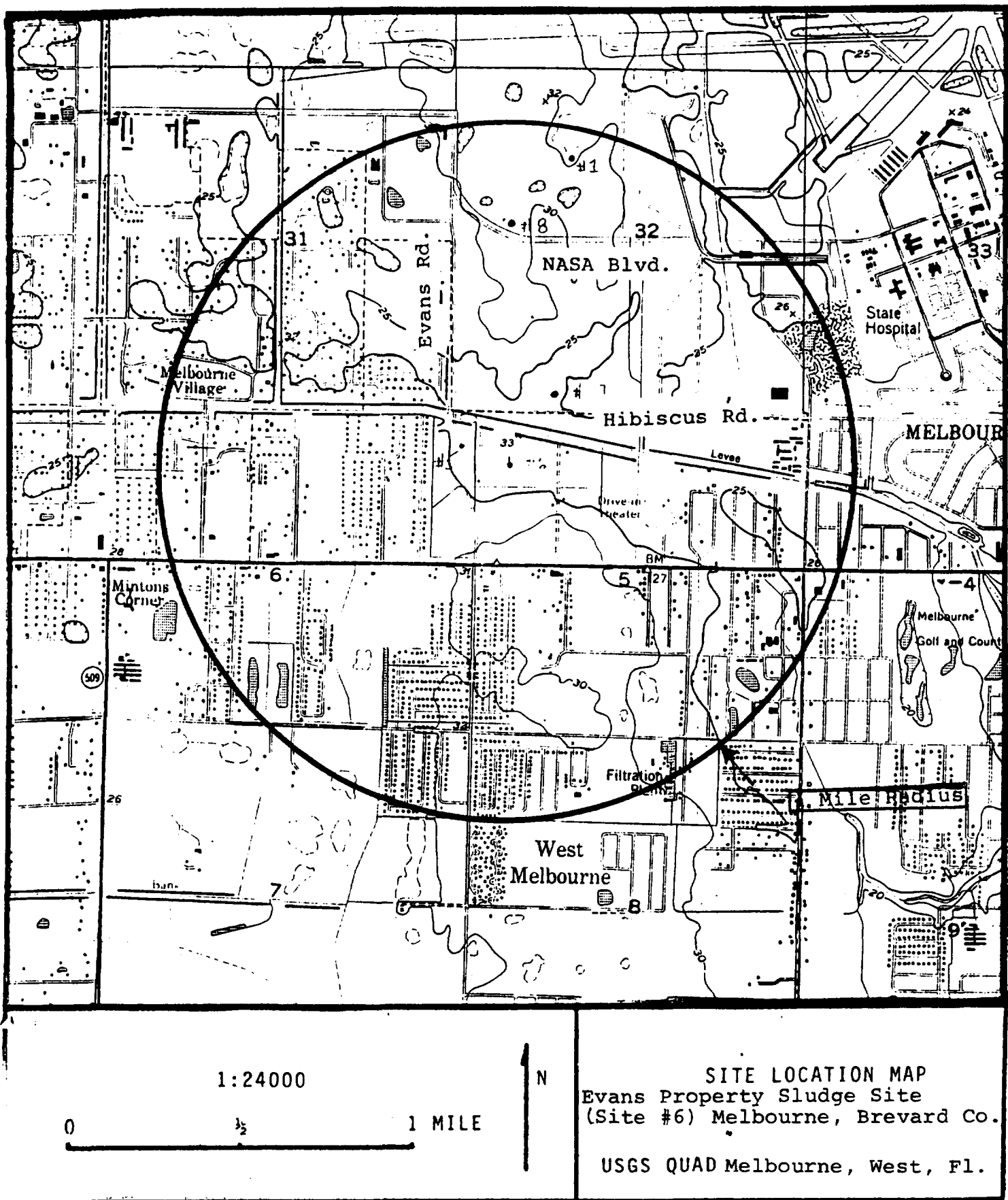


Figure 1

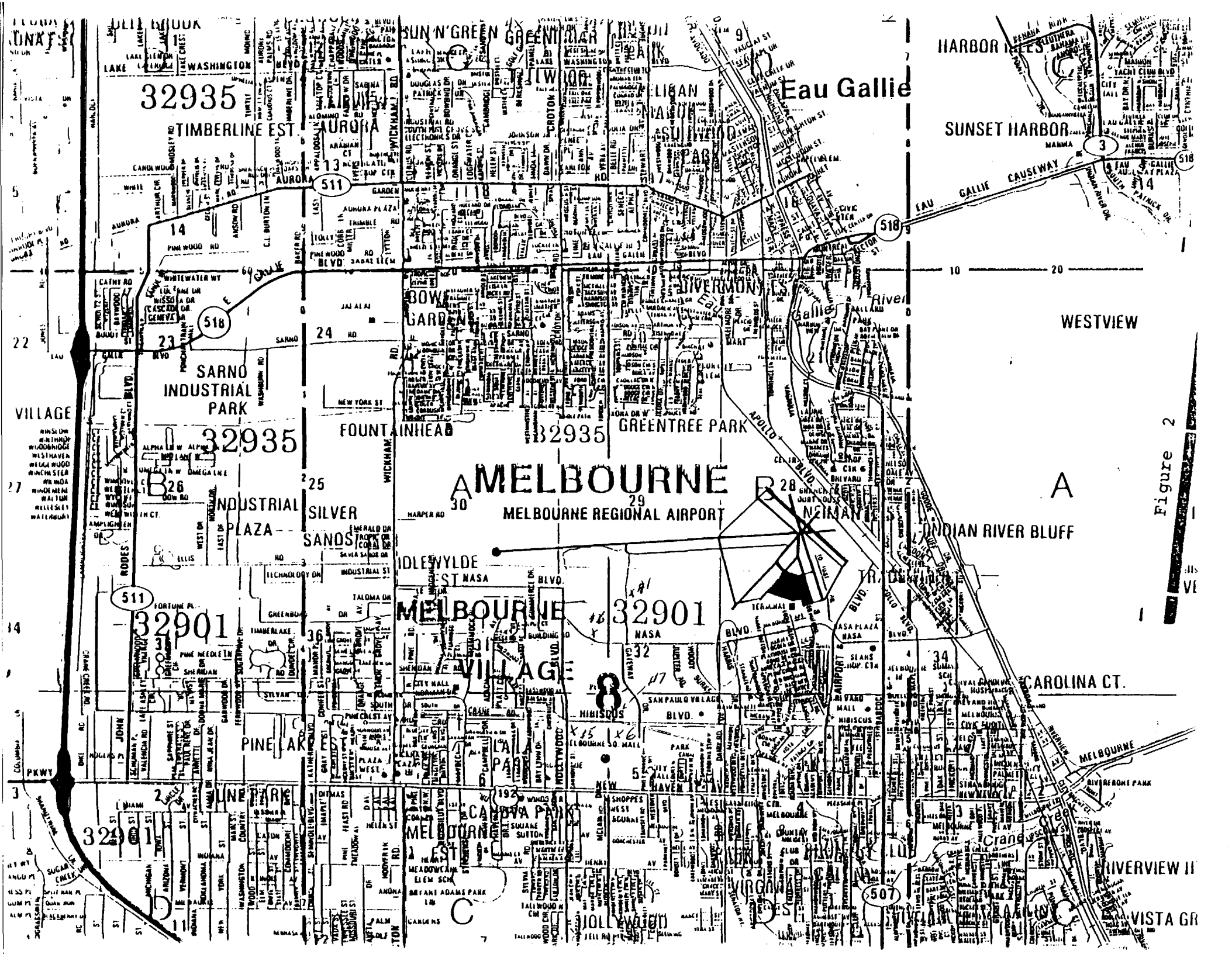


Figure 2





EVAN'S PROPERTY  
AKA: JOHN EVAN'S PROPERTY

References

Reference Number	Description of Reference
1.	Brown, D. W., W. E. Kenner, J. W. Crooks, and J. B. Foster. 1962. Water Resources of Brevard Co., Florida. RI No. 28. USGS.
2.	City of Palm Bay. 1988. Comprehensive Plan - Potable Water Element.
3.	Environmental Protection Agency. 6/5/81. Notification of Hazardous Waste Site.
4.	Sax, N. Irving. 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Co.
5.	Environmental Protection Agency. 1979. Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category.
6.	Topographic Maps. USGS. 1:24,000 (Melbourne, West and Melbourne, East Quads).
7.	Sittig, M. 1976. Toxic Metals--Pollution Control and Worker Protection. Noyes Publications, Park Ridge, NJ.
8.	Healy, H. 1977. Public Water Supplies of Selected Municipalities in Florida, 1975. WRI 77-53. USGS.
9.	Reece, Jack. Oct. 1988. GDU - Port Malabar Well Field Information.
10.	Lubinski, M. 12/22/88. Memo regarding Endangered Species.
11.	Appendix. Unlisted (Characteristic) Hazardous Wastes (40 CFR Part 261, Subpart C) and Lists of Hazardous Wastes (40 CFR Part 261, Subpart D).
12.	Sittig, M. 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, Second Edition. Noyes Publications, Park Ridge, NJ.
13.	E.P.A. 1986. Quality Criteria for Water - 1986.
14.	Moore, B. 9/22/88. Windshield Survey.
15.	City of Melbourne. 12/9/88. Sludge Analyses from 8/84 to 7/88 and Related Information.
16.	FDER. 9/25/87. Preliminary Assessment - McClenon's Property.
17.	Brevard County Appraiser's Office. 12/13/88. Conversation Record.
18.	Miller, E. 12/14/88. Conversation Record.

EVAN'S PROPERTY  
AKA: JOHN EVAN'S PROPERTY  
Page Two

References

Reference Number	Description of Reference
19.	Miller, C. 12/17/81. FDER Hazardous Waste Compliance Report.
20.	Sawicki, T. A. 4/4/84. FDER Hazardous Waste Compliance Report.
21.	Brevard County. 1988. Draft Comprehensive Plan - Potable Water Element.
22.	Moore, B. to E. Nuzie. 12/21/88. Memo on Potable Wells within 3 Miles of the Site.
23.	Toth, D. J. 1/88. Salt Water Intrusion in Coastal Areas of Volusia, Brevard, and Indian River Counties.
24.	NUS Corp. 3/87. Hazard Ranking System: Data Collection and Documentation Techniques for HRS Scoring of Hazardous Waste Sites.
25.	USEPA. 3/88. Region IV Preremedial Program Guidance.

1957  
WEST VIRGINIA

FLORIDA GEOLOGICAL SURVEY

U. S. ARMY CORPS OF ENGINEERS

GENERAL AND SURVEYING DIVISION, DISTRICT OF COLUMBIA

UNITED STATES GEOLOGICAL SURVEY

WASHINGTON, D. C.

WASHINGTON, D. C.

U. S. ARMY CORPS OF ENGINEERS, DISTRICT OF COLUMBIA

RESEARCH COUNCIL, FLORIDA

WATER RESOURCES

REPORT OF INVESTIGATION

NO. 1

FLORIDA

DEPARTMENT OF CONSERVATION

FLORIDA

Reference 1

TABLE 2. Stratigraphic Units of Brevard County, Florida

Geologic age	Stratigraphic unit		Approximate thickness (feet)	General lithologic character	Water-bearing properties
Recent	Pleistocene and Recent deposits		0-110	Fine to medium sand, coquina and sandy shell marl.	Permeability low due to small grain size, yields small quantities of water to shallow wells, principal source of water for domestic uses not supplied by municipal water systems.
Pleistocene					
Pliocene	Upper Miocene or Pliocene deposits		20-90	Gray to greenish gray sandy shell marl, green clay, fine sand, and silty shell.	Permeability very low, acts as confining bed to artesian aquifer, produces small amount of water to wells tapping shell beds.
Miocene	Hawthorn Formation		10-300	Light green to greenish gray sandy marl, streaks of greenish clay, phosphatic radiolarian clay, black and brown phosphorite, thin beds of phosphatic sandy limestone.	Permeability generally low, may yield small quantities of fresh water in recharge areas, generally permeated with water from the artesian zone. Contains relatively impermeable beds, that prevent or retard upward movement of water from the underlying artesian aquifer. Basal permeable beds are considered part of the Floridan aquifer.
Eocene	Ocala Group	Crystal River Formation	0-100	White to cream, friable, porous coquina in a soft, chalky, marine limestone.	Floridan aquifer: Permeability generally very high, yields large quantities of artesian water. Chemical quality of the water varies from one area to another and is the dominant factor controlling utilization. A large percentage of the ground water used in Brevard County is from the artesian aquifer. The Crystal River Formation will produce large quantities of artesian water. The Inglis Formation is expected to yield more than the Williston Formation. Local dense, indurated zones in the lower part of the Avon Park Limestone restrict permeability but in general the formation will yield large quantities of water.
		Williston Formation	10-50	Light cream, soft, granular marine limestone, generally finer grained than the Inglis Formation, highly fossiliferous.	
		Inglis Formation	70 ±	Cream to creamy white, coarse granular limestone, contains abundant echinoid fragments.	
	Avon Park Limestone		285 ±	White to cream, purple tinted, soft, dense chalky limestone. Localized zones altered to light brown or ashen gray, hard, porous, crystal-line dolomite.	

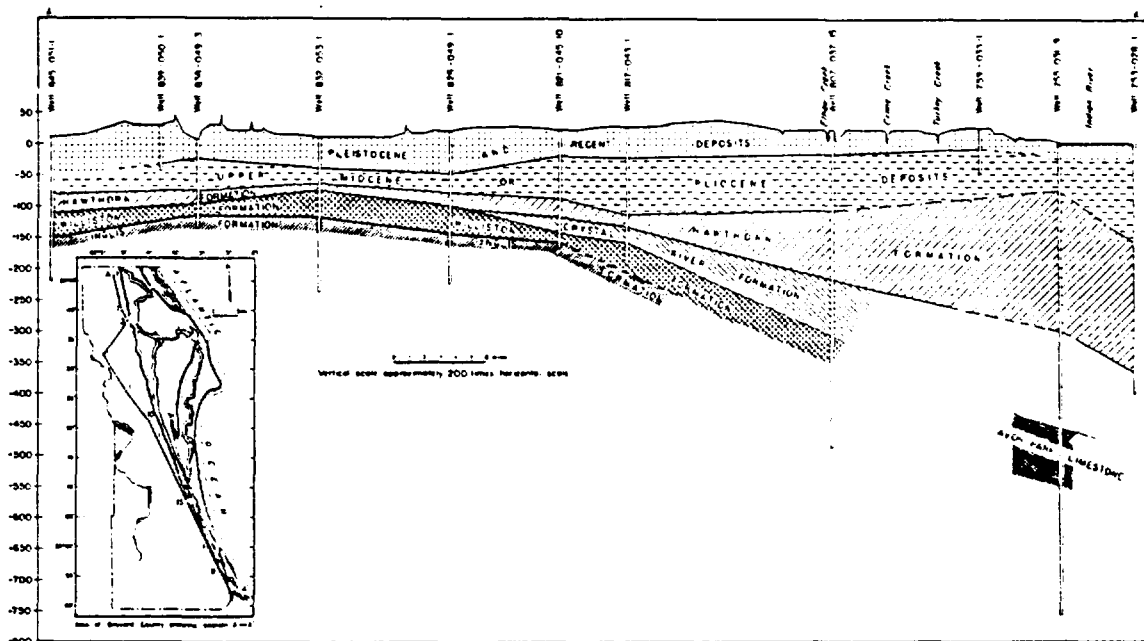


Figure 10. Geologic section A-A'.

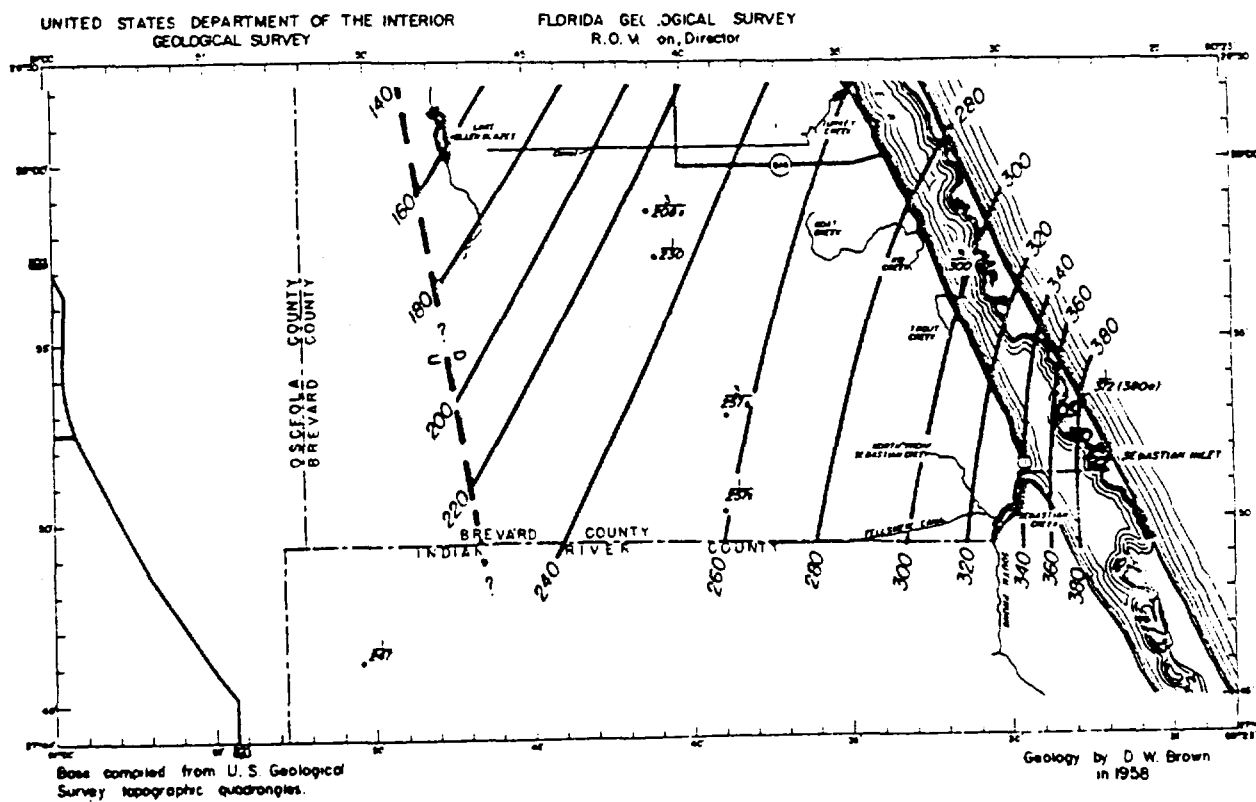


Figure 9. Brevard County showing contours on the surface of the limestone of Eocene Age.

surface of the zone of saturation in ordinary permeable soil or rock has been defined as the water table. The water table is not a plane surface but conforms generally to the configuration of the land surface. It contains small mounds or depressions that are due to local gain or loss of water. The water table does not remain stationary but fluctuates up and down in a manner similar to that of a water surface in a lake or reservoir.

The Pleistocene and Recent deposits are the principal deposits forming the nonartesian aquifer. There are some wells developed in the shell beds of the Hawthorn Formation. The Atlantic Coastal Ridge, which parallels the Indian River in Brevard County, forms the thickest part of the nonartesian aquifer. The nonartesian aquifer thins eastward and westward from the crest of the Atlantic Coastal Ridge. Sandy ridges that form a large part of the barrier islands are sources of nonartesian water for local residents and commercial establishments. In Brevard County the water table of the nonartesian aquifer ranges in depth from 0 to 22 feet below land surface but occurs generally at depths of less than 10 feet.

As a part of the investigation, 56 holes were augered and cased with 1¼-inch pipe and used as observation wells. The wells were located along east-west lines across the Atlantic Coastal Ridge and the lines were spaced from 6 to 12 miles apart (fig. 6). These wells were constructed to collect geologic information, to observe water-level fluctuations, and to procure water samples for chemical analysis.

#### SHAPE AND SLOPE OF THE WATER TABLE

The shape and slope of the water table is shown by means of water-table contours on a map of Brevard County (fig. 41). A water-table contour is a line along which all points on the water table have the same altitude. The water-table contours show the configuration of the water table in the same manner that topographic contours show the configuration of the land surface. Although the water table generally has less relief than the land surface, the configuration of the water table generally conforms to the shape of the land surface. Ground water moves downgradient at right angles to the water-table contours; thus, the contours indicate the general direction of ground-water movement, though not the rate. The rate is a function of the hydraulic gradient and the permeability of the sediments through which the water moves.

A ground-water divide is an imaginary line along each side of which the water table slopes downward and away from the line. The ground-water divide is analogous to the land divide between two drainage basins. The ground-water divide in Brevard County is shown in figure 41. This divide line generally follows the topographic high of the Atlantic Coastal Ridge.

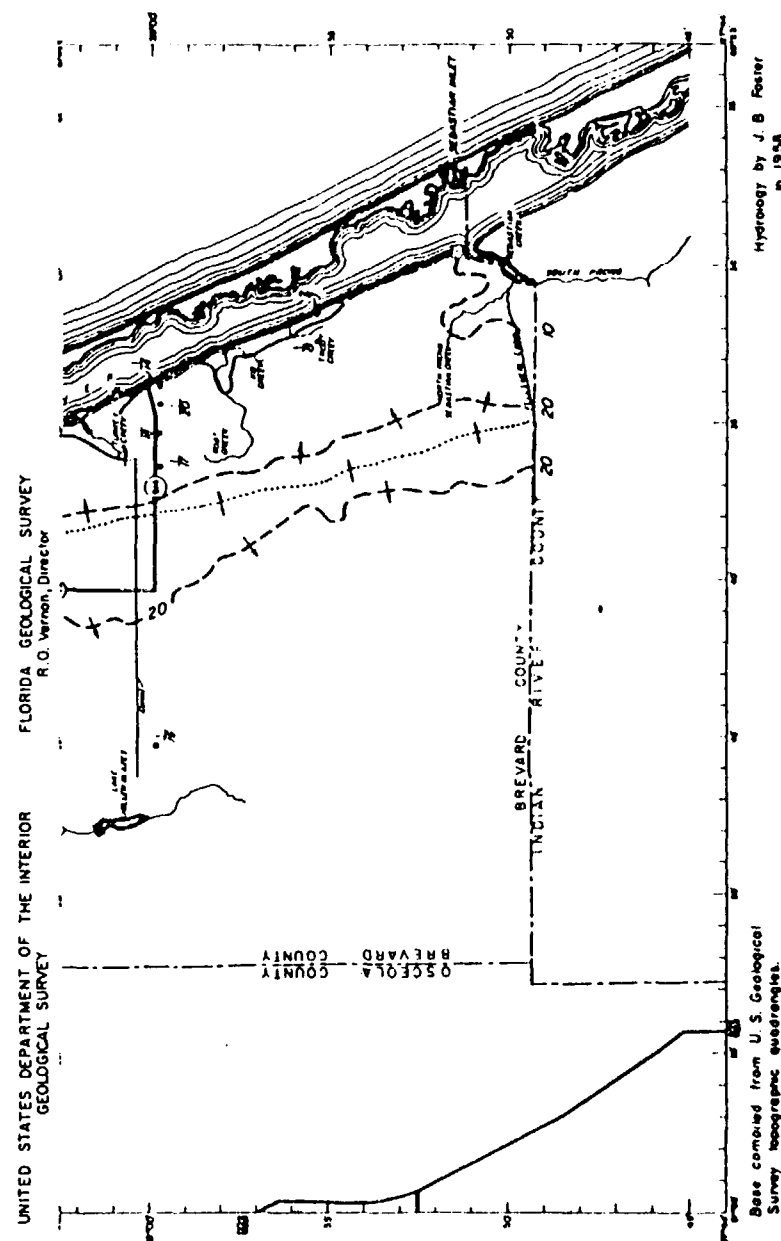
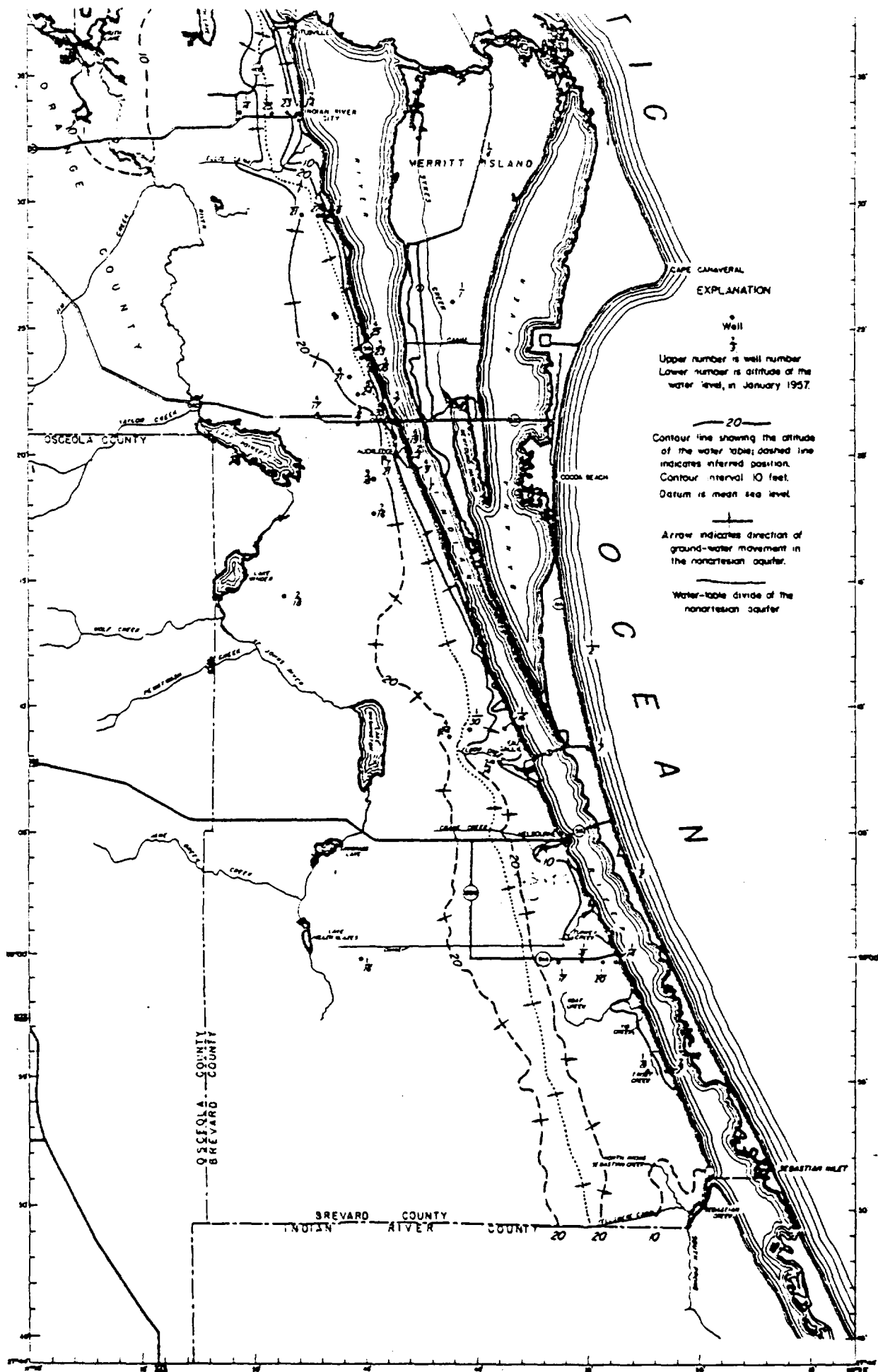


Figure 41. Brevard County showing water-table contours.



Base compiled from U. S. Geological Survey topographic quadrangles.

Hydrology by J. B. Foster  
in 1958

Figure 41. Brevard County showing water-table contours.

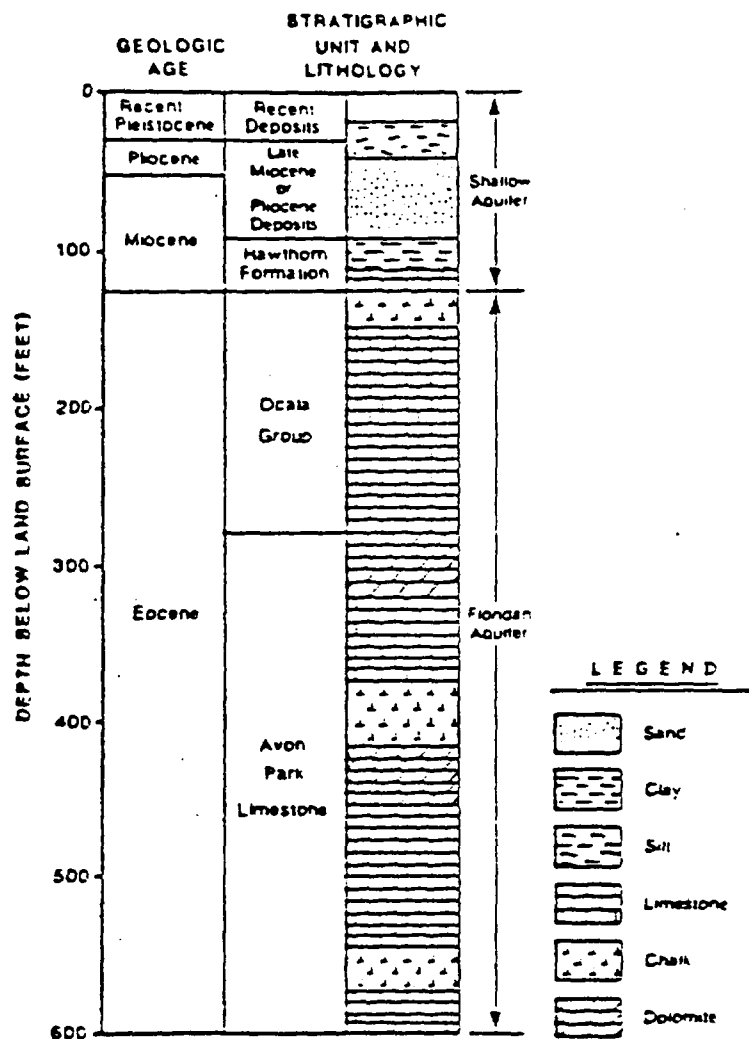


G. GROUND WATER

1. Aquifers

Groundwater is all water beneath the surface of the land and occurs in zones termed aquifers.

In Palm Bay two aquifers comprise the groundwater: The shallow aquifer and the more deeply located Floridan Aquifer. The following graphic depicts the two aquifers and their characteristics.



SOURCE: Port Malabar Water Supply Master Plan  
November 1986

The shallow aquifer is a layer of sandy soil, saturated with water and contiguous with surface water, streams, ponds and canals and extending beneath the land surface. The top of the shallow aquifer is the water table; the bottom is a limestone and clay strata known as the Hawthorne Formation which provides a barrier between the shallow and the Floridan Aquifer. Recharge to the shallow aquifer is provided by local rain-water which soaks into the ground and is stored in the sandy soils. Fluctuation in the water table occurs seasonally indicating changes in rainfall and the amount of water stored in the aquifer. The aquifer is very porous with transmissivity estimates at 10,000-20,000 gpd/ft<sup>2</sup>. The shallow aquifer is the main source of water for the General Development Utility System and for homeowners using individual wells.

The Floridan Aquifer water is used for irrigation and stock watering by the agricultural sector in west Palm Bay and by the Harris Corporation for diluting chemical wastes and by the City for swimming pond water.

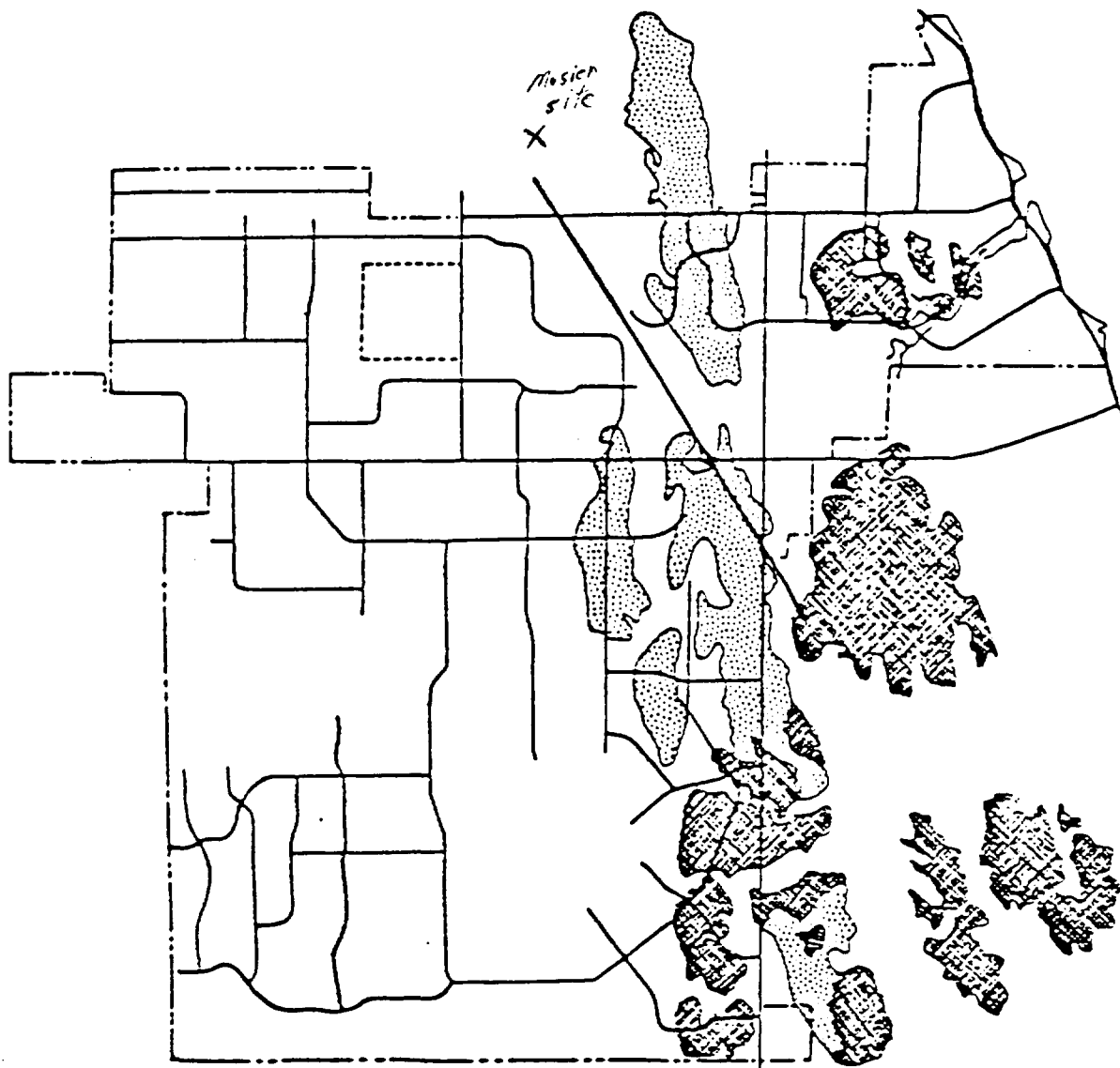
## 2. Quality

Water of the Floridan Aquifer, due to its high dissolved solids and chloride (salt) readings, is not considered suitable for human consumption (potable use) without treatment or dilution.



The shallow aquifer, however, does lend itself to potable uses. The amount of fresh water that the shallow aquifer is capable of producing to wells is a function of soils, vegetation, duration and intensity of rainfall, the slope of land surface and the permeability and thickness of the aquifer. The potentiometric surface<sup>1</sup> of the Floridan aquifer is above the water table. Thus, if the shallow aquifer is pumped at rates greater than the recharge rate, vertical upward leakage of the Floridan aquifer could occur with resulting reductions in the quality of the shallow aquifer's water. Other sources of saltwater and chlorides in the shallow aquifer are residuals from ocean deposits, irrigation build-ups and intrusions from canals and estuaries.

---

<sup>1</sup> Height to which water will rise in a cased well penetrating the aquifer.



**PALM BAY, FLORIDA  
POSSIBLE RECHARGE & POTENTIAL POTABLE WATER SUPPLY ZONES**

-  COASTAL RIDGE RECHARGE AREAS (USGS, 1977)
-  POTENTIAL POTABLE WATER SUPPLY AREAS (FRAZEE, 1978)

SOURCE: CITY OF PALM BAY COMPREHENSIVE PLAN, 1981

0 1 mile

*By Comparison to USGS Quad Map*



" (Bgy Rounded) = 19.99

Non-potable agricultural/industrial and City recreation uses of the Floridan Aquifer are expected to continue.

**DRAFT**



## Notification of Hazardous Waste Site

Side Two

## F. Waste Quantity:

Place an X in the appropriate boxes to indicate the facility types found at the site.

In the "total facility waste amount" space give the estimated combined quantity (volume) of hazardous wastes at the site using cubic feet or gallons.

In the "total facility area" space, give the estimated area size which the facilities occupy using square feet or acres.

## Facility Type

1. ☐ Piles
2. ☐ Land Treatment
3. ☐ Landfill
4. ☐ Tanks
5. ☐ Impoundment
6. ☐ Underground Injection
7. ☐ Drums, Above Ground
8. ☐ Drums, Below Ground
9. ☐ Other (Specify) Land spreading of sludge from POTW

## Total Facility Waste Amount

cubic feet

gallons 38,000/day

## Total Facility Area

square feet

acres + 240

## G Known, Suspected or Likely Releases to the Environment:

Place an X in the appropriate boxes to indicate any known, suspected, or likely releases of wastes to the environment.

☐ Known ☐ Suspected ☐ Likely ☒ No:

Note: Items Hand I are optional. Completing these items will assist EPA and State and local governments in locating and assessing hazardous waste sites. Although completing the items is not required, you are encouraged to do so.

## H Sketch Map of Site Location: (Optional)

Sketch a map showing streets, highways, routes or other prominent landmarks near the site. Place an X on the map to indicate the site location. Draw an arrow showing the direction north. You may substitute a publishing map showing the site location.

SEE ATTACHED

## I Description of Site: (Optional)

Describe the history and present conditions of the site. Give directions to the site and describe any nearby wells, springs, lakes, or housing. Include such information as how waste was disposed and where the waste came from. Provide any other information or comments which may help describe the site conditions.

Sludge from two (2) POTW contains waste from electro-plating firms. Sites had the prior approval of Florida Department of Regulations

## J Signature and Title:

The person or authorized representative (such as plant managers, superintendents, trustees or attorneys) of persons required to notify must sign the form and provide a mailing address (if different than address in item A). For other persons providing notification, the signature is optional. Check the boxes which best describe the relationship to the site of the person required to notify. If you are not required to notify, check the box for "Other".

Name Samuel H. Halter, City Manager  
CITY OF MELBOURNE  
Street 900 E. Strawbridge Avenue  
City Melbourne State FL Zip Code 32901

- ☒ Owner, Present  
☐ Owner, Past  
☐ Transporter  
☐ Operator, Present  
☐ Operator, Past  
☐ Other

ATTACHMENT

NOTIFICATION OF HARZARDOUS WASTE SITE

ITEM B:

Present Sites: *Spread 1979-81*

1. Approximately 120 acres of the southwest section of the Melbourne Regional Airport property, off of Nasa Blvd.
2. Approximately 40 acres of pasture land, i.e., Masier's property, located off of Eber Blvd., and east of Minton Road.
3. Approximately 40 acres of pasture land. i.e., Mr. McClenon's property, located off of Dairy Rd. and 1/4 mile west on Florida Ave.

All of the above areas are undeveloped and remote from public and no drainage from sites to public or private drinking water supplies.

Waste disposal began in 1965 and ended in 1979 at the subsequent sites:

4. Harbor City Golf Course, located west of Croton Road and north of Lake Washington Road.
5. Evans Road, east side, right-of-way. *NASA - New Haven*
6. John Evans property, 148 acres of pasture land. *NW of 52*
7. Hibiscus Blvd., north side, right-of-way from Collins Avionics's west to Evans Road.
8. Nasa Blvd., north side right-of-way from Woody Burke Road to Wickham Road.

Scientific Systems  
Services, Inc.

MELBOURNE REGIONAL

MELBOURNE  
VILLAGE

511

35

32

500

192

509

WEST MELBOURNE

1 THOMAS JEFFERSON LA  
2 JOHN HANCOCK LA

14

13

2

95

PALM

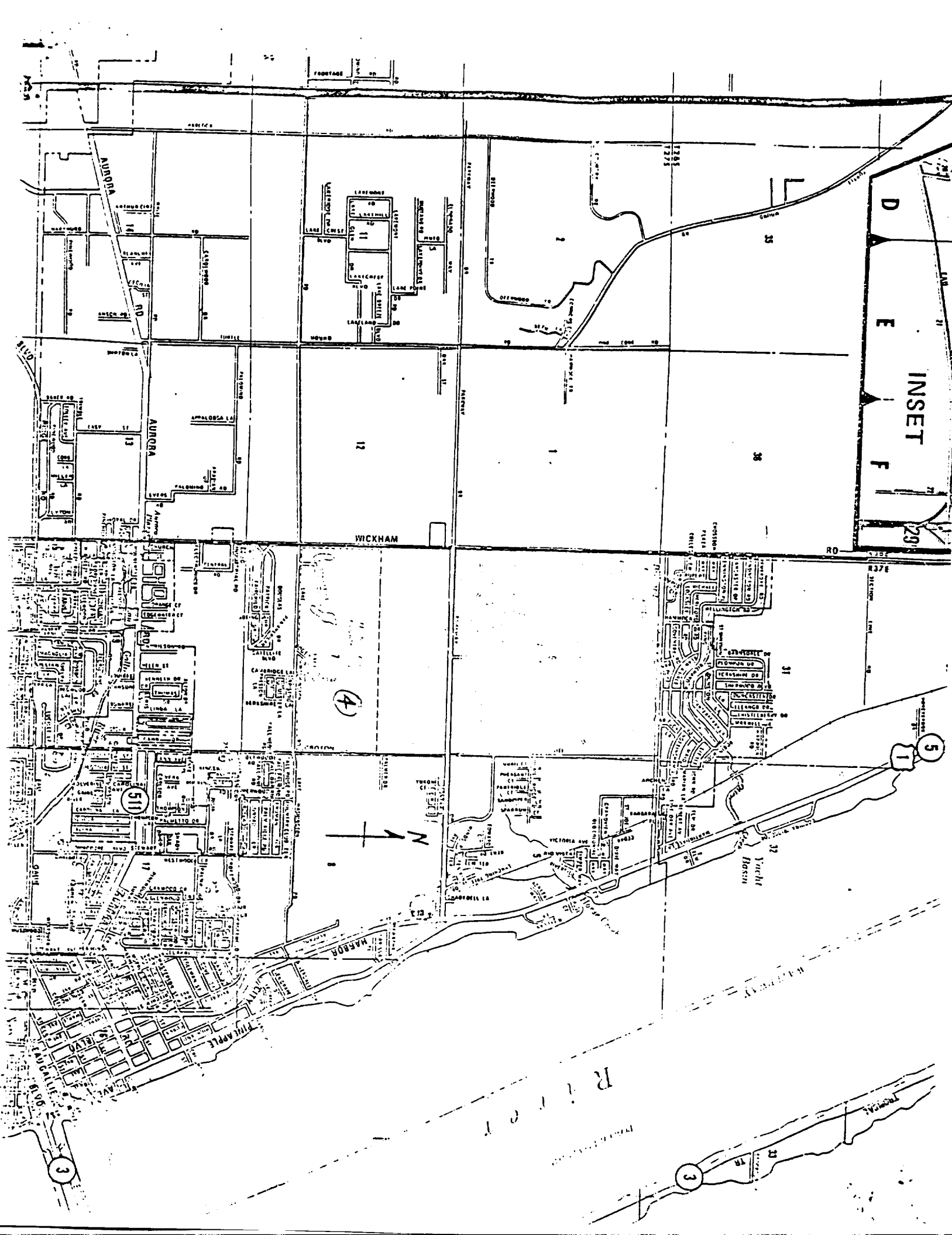
BAY

20

Air Force  
Eastern Test Range  
Malahar Annex

509





LEVEL: REG 04  
 SELECTION: INTEGRATED  
 SEQUENCE: REGION, STATE, SITE NAME  
 EVENT: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
 CERCLIS V 1.2

PAGE: 115  
 RUN DATE: 01/13/85  
 RUN TIME: 18:14:05

L.B - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME STREET CITY COUNTY NAME	STATE ZIP COUNTY CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD004126868	MEDALLION PAINT & COLOR 2810 N ROSEMARY AVE WEST PALM BEACH PALM BEACH	FL 33407 099		H01	DS1 PA1	09/16/85	02/01/85 09/16/85	EPA STATE
04	FLD032531154	MEDICAL SUPPLY CO 6687 NW 16 TERRACE FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1		06/01/85	STATE
04	FLD980556468	MELBOURNE REGIONAL AIRPORT OFF NASA BLVD MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1		06/01/81 09/01/82	EPA
04	FLD981024490	MELWEB SIGNS, INC. 5314 NW 10TH TERRACE FT. LAUDERDALE BROWARD	FL 33309 011		H01	PS1		09/24/85	STATE
04	FLD981024755	METROPOLITAN PARK ADAMS ST. JACKSONVILLE DUVAL	FL 32202 031		H01	DS1 PA1	09/30/85 09/30/85	09/30/85 10/17/85	EPA EPA
04	FLD004119426	MIAMI BATTERY & ELECTRIC CO 11100 NW SOUTH RIVER DR MEDLEY DADE	FL 33178 025		H01	DS1		02/01/85	EPA
04	FLD080174162	MIAMI DADE WATER & SEWER AUTHORITY 3575 S LEJEUNE RD MIAMI DADE	FL 33134 025		H01	PS1		07/01/79	EPA
04	FLD076027320	MIAMI DRUM SERVICES 7049 NW 70TH ST MTAMI DADE	FL 33166 025		H01	DS1 PA1 ST1 HR1		11/01/79 09/01/82 11/01/84 12/01/82	EPA STATE

LEVEL: 04  
 SELECTION: INTEGRATED  
 SEQUENCE: REGION, STATE, SITE NAME  
 EVENTS: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
 CERCLIS V 1.2

PAGE: 112  
 RUN DATE: 01/13/86  
 RUN TIME: 18:14:05

L.8 - SITE/EVENT STATUS LISTING

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04	FLD061906426	MARYLAND ASSEMBLIES INC PUCKETT RD PERRY TAYLOR	FL 32347 123		H01	DS1 PA1	10/01/84	10/01/84	EPA STATE
04	FLD980556476	MASIER'S PROPERTY #2 OFF EBER BLVD MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1		06/01/81 11/01/82	EPA
04	FLD981015597	MATHEWS BROTHERS DUMP NW 74TH ST & NW 81 AVE MIAMI DADE	FL 33166 025		H01	DS1 PA1	05/30/85	06/10/85 06/10/85	EPA EPA
04	FLD084131390	MCARTHUR DAIRY 308 NW 5TH ST OKEECHOBEE OKEECHOBEE	FL 33472 093	N	H01	DS1 SI1	11/01/79	07/01/79 12/01/79	EPA STATE
04	FLD980556484	MCCLENONS PROPERTY OFF DAIRY RD MELBOURNE #3 BREVARD	FL 32901 009	N	H01	DS1		06/01/81	EPA
04	FLD080170095	MCCUNE RADIO-AIRE 4165 N. POWERLINE ROAD FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1 PA1	10/07/85	06/01/85 12/21/85	STATE STATE
04	FLD053501102	MCI CORP 6110 GUNN HWY TAMPA HILLSBOROUGH	FL 33624 057		H01	DS1 PA1 SI1	10/01/84 04/09/85	08/01/80 10/01/84 08/27/85	EPA STATE STATE
04	FLD980556369	MCKENZIE TANK LINES TRANSFER NORTH END NELSON ST JACKSONVILLE DUVAL	FL 32205 031	N	H01	DS1 PA1		06/01/81 06/01/82	EPA

LEVEL: REG 04  
 SELECTION: INTEGRATED  
 SEQUENCE: REGION, STATE, SITE NAME  
 EVENTS: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
 CERCLIS V 1.2

PAGE: 99  
 RUN DATE: 01/13/86  
 RUN TIME: 18:14:05

L.8 - SITE/EVENT STATUS LISTING

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04	FLD981029739	H K AUTO BODY 1101 NW 51 STREET FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1 PA1	10/25/85	06/01/85 10/30/85	STATE STATE
04	FLD981029671	HALL FOUNTAIN, INC. 5500 NW 22 AVENUE FT LAUDERDALE BROWARD	FL 33309 011		H01	DS1		06/01/85	STATE
04	FLD980556534	HARBOR CITY GOLF COURSE #4 WEST OF CROTON RD MELBOURNE BREVARD	FL 32935 009	N	H01	DS1 PA1		06/01/81 08/01/82	EPA
04	FLD004145850	HARMSCO INC. 7169 49TH TERRACE NORTH WEST PALM BEACH PALM BEACH	FL 33407 099		H01	DS1 PA1 SI1	10/01/84 06/08/85	07/01/79 10/01/84 08/28/85	EPA STATE STATE
04	FLD981029622	HARRIS COMPUTER 1200 GATEWAY DR. POMPANO BEACH BROWARD	FL 33309 011		H01	DS1		06/01/85	STATE
04	FLD000602334	HARRIS CORP/GENERAL DEVELOPMENT UTILS OFF PALM BAY BLVD PALM BAY BREVARD	FL 32905 009		H01	DS1 PA1 SI1	02/01/85	09/01/80 11/01/82 02/01/85	EPA EPA
04	FLD000826842	HAYNESWORTH MINE/BREWSTER PLANT SR 37 BRADLEY POLK	FL 33835 105		H01	DS1 PA1	09/19/85	11/01/79 09/19/85	EPA STATE

LEVEL: REG 04  
 SELECTION: INTEGRATED  
 SEQUENCE: REGION, STATE, SITE NAME  
 EVENTS: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
 CERCLIS V 1.2

PAGE: 90  
 RUN DATE: 01/13/86  
 RUN TIME: 18:14:05

L.B - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME STREET CITY COUNTY NAME	STATE ZIP COUNTY CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL DATE	EVENT LEAD
04	FLD980556674	ESTECH GENERAL CHEMICALS CORP 2121 THIRD ST SW WINTERHAVEN POLK	FL 33880 055		H01	DS1 PA1		06/01/81 08/01/82	EPA
04	FLD004106829	ESTECH GENERAL CHEMS SILVER CITY MINE SR 555 BARTOW POLK	FL 33830 105	N	H01	DS1 PA1		10/01/79 03/01/80	EPA
14	FLD980845374	ETTLINGERS PIT 2805 KINGS AVE JACKSONVILLE DUVAL	FL 32207 031		H01	DS1 PA1		02/01/85 09/12/85	EPA EPA
14	FLD980556500	EVANS PROP OFF HIBISCUS BLVD MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1		06/01/81 08/01/82	EPA
14	FLD981024888	EVERGLADES LABOR CAMP 38277 SW 192ND AVE. FLORIDA CITY DADE	FL 33034 017		H01	DS1		12/31/84	STATE
14	FLD980846497	EVERGREEN DUMP 6281 WINONA DRIVE JACKSONVILLE DUVAL	FL 32206 031		H01	DS1 PA1	09/17/85 09/17/85	09/17/85 09/17/85	STATE EPA
14	FLD101949535	EXECUTIVE TERMINAL CORP 1575A W COMMERCIAL BLVD FT. LAUDERDALE BROWARD	FL 33309 011		H01	DS1		06/01/85	STATE
14	FLD000827097	EXXON BULK PLANT NO. 4556 917 N MAIN ST IMMOKALEE COLLIER	FL 33934 021		H01	DS1 PA1		06/01/81 01/01/83	EPA

LEVEL: REG 04  
 SELECTION: INTEGRATED  
 SEQUENCE: REGION, STATE, SITE NAME  
 EVENTS: SITE EVAL

U.S. ENVIRONMENTAL PROTECTION AGENCY  
 OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
 C E R C L I S V 1.2

PAGE: 118  
 RUN DATE: 01/13/84  
 RUN TIME: 18:14:05

L.8 - SITE/EVENT STATUS LISTING

REG	EPA ID NO.	SITE NAME STREET CITY COUNTY NAME	STATE ZIP COUNTY CODE	RESP. TERM.	PROG. CODE	EVENT TYPE	ACTUAL START DATE	ACTUAL COMPL. DATE	EVENT LEAD
04	FLD084717545	NEW WALES CHEMICAL INC SR 640 MULBERRY POLK	FL 33860 105		H01	DS1 PA1	11/01/79 03/01/80		EPA
04	FLD981004054	NEWBERRY LANDFILL COUNTY ROAD 337 NEWBERRY ALACHUA	FL 32669 001		H01	DS1 SI1	04/01/84 09/26/85		EPA EPA
04	FLD980845143	NEWPORT LANDFILL JCT WEST IDLEWOOD & KEY COURT PENSACOLA ESCAMBIA	FL 32505 033		H01	DS1 PA1	02/01/85 09/12/85		EPA STATE
04	FLD980556518	NO NAME HIBISCUS BLVD #7 MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1	06/01/81 09/01/82		EPA
04	FLD980556492	NO NAME EVANS RD #5 MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1	06/01/81 09/01/82		EPA
04	FLD980556526	NO NAME NASA BLVD #8 MELBOURNE BREVARD	FL 32901 009	N	H01	DS1 PA1	06/01/81 10/01/82		EPA
04	FLD980709398	NOCATEE HULL CREOSOTE HULL RD NOCATEE DE SOTO	FL 33864 027		H01	DS1 PA1 IR1	10/01/84 01/01/83 10/01/84 12/01/82		EPA STATE
04	FLD099615627	NORCROSS INDUSTRIES INC 5500 GEORGIA AVE WEST PALM BEACH PALM BEACH	FL 33405 099		H01	DS1	02/01/85		EPA

# Dangerous Properties of Industrial Materials

## Sixth Edition

**N. IRVING SAX**

**Assisted by:**

Benjamin Feiner/Joseph J. Fitzgerald/Thomas J. Haley/Elizabeth K. Weisburger



VAN NOSTRAND REINHOLD COMPANY  
New York

EPA

# Development Document for Existing Source Pretreatment Standards for the

Final

## Electroplating

## Point Source Category

REPRODUCED BY  
NATIONAL TECHNICAL  
INFORMATION SERVICE  
U. S. DEPARTMENT OF COMMERCE  
SPRINGFIELD, VA. 22151



# TOXIC METALS

Pollution Control and Worker Protection

Marshall Sittig

NOYES DATA CORPORATION

Park Ridge, New Jersey, U.S.A.

1976

LIBRARY  
STATE OF FLORIDA  
DEPARTMENT OF ENVIRONMENTAL REGULATION

PUBLIC WATER SUPPLIES OF SELECTED  
MUNICIPALITIES IN FLORIDA, 1975

By Henry G. Healy

U.S. GEOLOGICAL SURVEY

WATER-RESOURCES INVESTIGATIONS 77-53

Prepared in cooperation with

FLORIDA DEPARTMENT OF ENVIRONMENTAL REGULATION  
SOUTH FLORIDA WATER MANAGEMENT DISTRICT  
SOUTHWEST FLORIDA WATER MANAGEMENT DISTRICT  
ST JOHNS RIVER WATER MANAGEMENT DISTRICT  
SUWANNEE RIVER WATER MANAGEMENT DISTRICT  
NORTHWEST FLORIDA WATER MANAGEMENT DISTRICT  
AND OTHER STATE, LOCAL, AND FEDERAL AGENCIES

July 1977



PORT MALABAR, SEBASTIAN HIGHLANDS, JULINGTON CREEK  
SILVER SPRINGS SHORES, DIVISIONS  
5240 BABCOCK STREET, N.E., PALM BAY, FLORIDA 32905

(407) 723-2877

October 27, 1988

Brian Moore - Room 565B  
Department Environmental Regulation  
2600 Blair Stone Road  
Twin Towers Office Building  
Tallahassee, FL 32399-2400

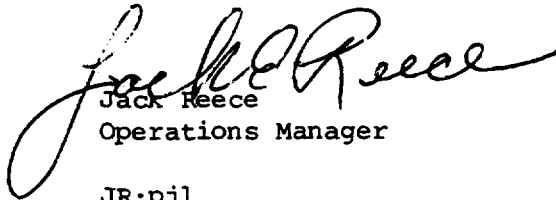
Dear Brian:

The attached General Development Utilities, Inc. (GDU) (Port Malabar Division) well information and well field map is submitted per your conversation with Tom O'Brien.

If you require additional information, please call me at (407) 724-2000, Ext. 408. Thank you.

Sincerely,

GENERAL DEVELOPMENT UTILITIES, INC.  
Port Malabar, Sebastian Highlands,  
Julington Creek, Silver Springs Shores

  
Jack Reece  
Operations Manager

JR:pjl

Att.

pc: file

**RECEIVED**  
OCT 31 1988

BUREAU OF WASTE CLEANUP  
Twin Towers

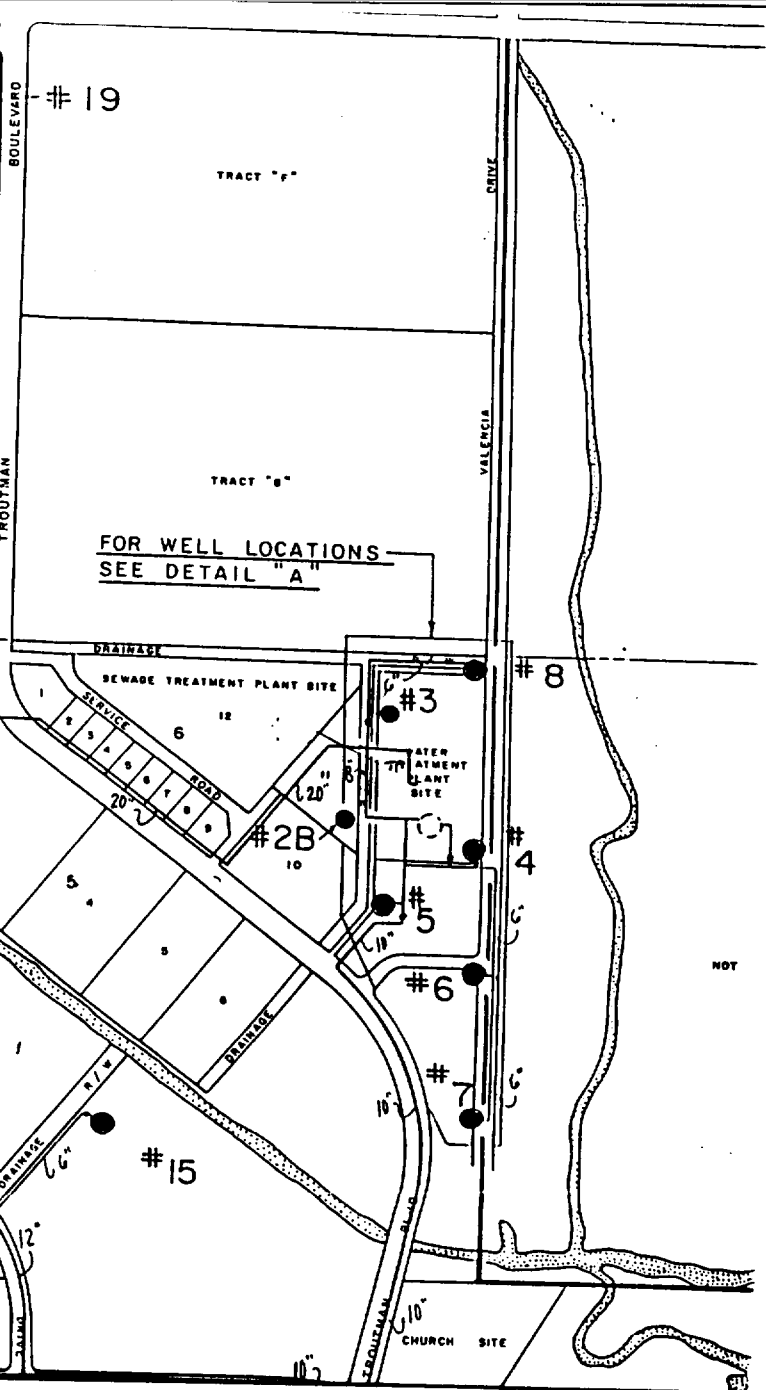
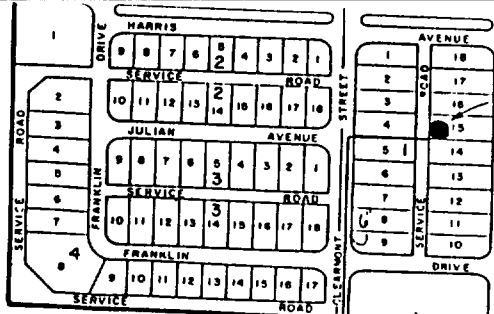
TABLE C  
EXISTING GROUNDWATER SOURCES

WELL NO.	CASING DIA.-INCH INT/EXT	TOTAL DEPTH (FT)	CASING DEPTH (FT)	AVERAGE PUMPING (GPM)	FLOWING OR PUMPED	DESIGN PMP CAPACITY GPM/TDH	SOURCE AQUIFER	USE
2B*	8/16	100	70	15	PUMPED	100/115	SHALLOW	HOUSEHOLD
3*	8/16	100	70	43	PUMPED	150/116	SHALLOW	HOUSEHOLD
4*	8/16	85	52	105	PUMPED	150/112	SHALLOW	HOUSEHOLD
5*	8/16	85	52	65	PUMPED	175/115	SHALLOW	HOUSEHOLD
6*	8/16	80	50	80	PUMPED	150/120	SHALLOW	HOUSEHOLD
7*	8/16	95	55	120	PUMPED	250/135	SHALLOW	HOUSEHOLD
8*	8/16	90	50	100	PUMPED	150/120	SHALLOW	HOUSEHOLD
9	8/16	100	70	145	PUMPED	160/140	SHALLOW	HOUSEHOLD
10	8/16	100	70	220	PUMPED	255/155	SHALLOW	HOUSEHOLD
11	8/16	106	74	100	PUMPED	275/187	SHALLOW	HOUSEHOLD
12	8/16	104	74	180	PUMPED	255/186	SHALLOW	HOUSEHOLD
13	8/16	100	70	220	PUMPED	250/187	SHALLOW	HOUSEHOLD
14	8/16	115	80	70	PUMPED	150/187	SHALLOW	HOUSEHOLD
15	8/16	97	62	190	PUMPED	250/187	SHALLOW	HOUSEHOLD
16	8/16	105	90	170	PUMPED	250/135	SHALLOW	HOUSEHOLD
17	8/16	103	73	310	PUMPED	400/125	SHALLOW	HOUSEHOLD
18	8/16	101	71	90	PUMPED	250/162	SHALLOW	HOUSEHOLD
19**	8/16	100	70	-	--	---	--	--
20	10	89	70	250	PUMPED	275/150	SHALLOW	HOUSEHOLD
21	10	87	65	120	PUMPED	160/150	SHALLOW	HOUSEHOLD
22	10	101	77	150	PUMPED	185/150	SHALLOW	HOUSEHOLD
23	10/16	104	60	220	PUMPED	260/150	SHALLOW	HOUSEHOLD
24	10/16	93	60	150	PUMPED	210/150	SHALLOW	HOUSEHOLD
28	10/16	105	60	220	PUMPED	200/150	SHALLOW	HOUSEHOLD
49	10/16	98	60	198	PUMPED	250/150	SHALLOW	HOUSEHOLD
F-1	12	360	300	500	FLOWING	700/100	DEEP FLA.	AQUIFER

\* WELL PUMPED TO A VOLATILE ORGANIC COMPOUND PRETREATMENT UNIT

\*\* INACTIVE

# of connections 9/88 = 11,808





Reference 10

*Evans Property*

For Routing To Other Than The Addressee	
To: _____	Location: _____
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

State of Florida  
DEPARTMENT OF ENVIRONMENTAL REGULATION

# Interoffice Memorandum

From: Mary Lubinski *ML*  
To: Brian Moore  
Subject: Endangered Species of Brevard County

12/21/88

Enclosed is information regarding endangered and threatened species  
Which are found in Brevard County.

COMPREHENSIVE PLAN

CITY OF  
WEST MELBOURNE

HOUSING, RECREATION AND OPEN SPACE,  
CONSERVATION, PUBLIC FACILITIES,  
INTERGOVERNMENTAL COORDINATION,  
FUTURE LAND USE, AND  
CAPITAL IMPROVEMENTS

APRIL 1, 1988

PREPARED BY  
WEST MELBOURNE DEPARTMENT OF COMMUNITY DEVELOPMENT  
WEST MELBOURNE DEPARTMENT OF ENGINEERING  
EAST CENTRAL FLORIDA REGIONAL PLANNING COUNCIL

Preparation of this document was aided through financial assistance received from the State of Florida under the Local Government Comprehensive Planning Assistance Program authorized by Chapter 86-167, Laws of Florida, and administered by the Florida Department of Community Affairs.

Mammals found in Sloughs include the bobcat, the deer, the grey fox, the marsh rabbit, the opossum, the cotton rat, and the raccoon. Birds in the community include the bobwhite quail, cranes, egrets, herons, ibis, meadowlark, red-shouldered hawks, and snipe. Frogs and salamanders are examples of amphibians. Reptiles found in Sloughs are the cottonmouth moccasin, the eastern diamondback rattlesnake, the pigmy rattlesnake, the ringneck snake, and the yellow rat snake.

The last three communities accentuate the importance of Erna Nixon Park. The park is a positive force for the city and should continue to be protected. Development in the surrounding areas of the park has had an adverse affect on the natural habitat in the park. The area north of the park is zoned for industrial use in Brevard County, while the area to the east is zoned industrial in the City of Melbourne. Residential development in the Town of Melbourne Village and West Melbourne is located to the west and south of the park. The city should do everything in its power to protect and preserve the remaining habitats in the park area.

Brevard County is home to several endangered and threatened species. This fact combined with the types of ecological communities found in West Melbourne provide a method to determine species possibly existing in the city. The following species designated by federal and state agencies as endangered or threatened possibly exist in West Melbourne. Some of the birds are known to inhabit the Crane Creek area.

#### Reptiles

American Alligator,  
Eastern Indigo Snake  
Gopher Tortoise  
Florida Pine Snake

#### Mammals

Bobcat  
Florida Mouse

#### Plants

Pigmy-Pipes  
Florida Beargrass

#### Birds

Kirtland's Warbler  
Little Blue Heron  
Louisiana (Tricolored) Heron  
Florida Sandhill Crane  
Bald Eagle  
Migrant Loggerhead Shrike  
Bachman's Sparrow  
Southeastern Kestrel  
Bachman's Warbler  
Wood Stork  
Osprey  
Marsh Hawk  
Reddish Egret  
Snowy Egret  
Tricolored Heron

#### Amphibians

Flatwoods Salamander



### Plants

Celestial Lily  
Golden Leather Fern  
Rein Orchid  
Catesby Lily  
Snowy Orchid  
Big Yellow Milkwort  
Wild Coco  
Fragrant Ladies Tresses  
Slender Ladies Tresses  
Spring Ladies Tresses  
Giant Wild Pine  
Tampa Vervain  
Simpson Zephyr Lily  
Giant Leather Fern  
Mosquito Fern  
Bearded Grass Pink  
Marsh Fern  
Royal Fern  
Downy Shield Fern  
Netted Chain Fern  
Rose Pogonia  
Nodding Club Moss

It is known that an active bald eagle's nest exists just south of the West Melbourne corporate limits, near the cattle farm. The city should ensure any federal and state regulations which might affect land in West Melbourne associated with the eagle's habitat are strictly adhered to.

It is difficult for the city to monitor the movements of animal species that are endangered or threatened. Most of the species, both animal and plant, that possibly are in West Melbourne would be located in Erna Nixon Park or near the various waterbodies. The city should, where possible, join in studies to determine exactly which species are present and, if they are present, to set up programs for protection.

As stated earlier, there are very few areas left in the city that are in a natural state. It is difficult to control the clearing of land for development in an urban area. Erna Nixon Park will remain a natural state. The city should coordinate with developers to try and minimize the total clearing of land, especially in residential areas.

# Boaters' Guide to **MANATEES:** The Gentle Giants



Featuring Maps of  
Manatee Sanctuaries  
in Florida





## Seeking Warm Water Refuge

Manatees are not territorial and associations with other manatees are usually brief, lasting for several hours or days. Groups often form when they seek the same warm-water areas.

Current evidence and observations of manatees seem to indicate that these warm-water areas are needed for the manatee's survival, as the minimum water temperature they are able to tolerate for long periods of time is approximately 66F (19C).

## Power Plant Outfalls

Historically, manatees have used springs and spring-fed rivers for refuge, but many of these areas increasingly are being used for recreational purposes. As an alternative, manatees are using power plants and other industrial outfalls for refuge. Ironically, while the increasing human population pushes manatees away from some areas, the power plants that provide electricity to this growing populace serve as a refuge for the peaceful mammal.

The survival of the manatee is still in doubt, but government, industry and conservationists – with the help of the concerned boating public – are working together to ensure that Florida

## Sanctuaries Established

The greatest single cause of manatee death is collision with boats. Nearly all Florida's manatees bear boat injuries and propeller scars.

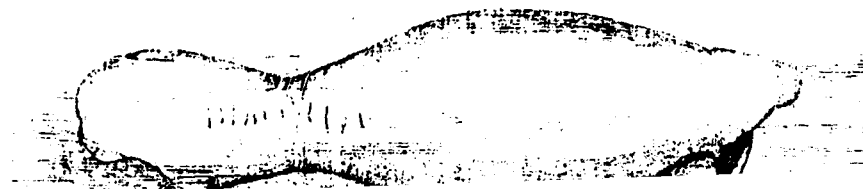
As a result of legislative action in 1978, 13 winter manatee sanctuaries were established and speed zone signs posted. Other sanctuaries have been created since then bringing the total to nearly 20 manatee sanctuaries in Florida.

Some sanctuary speed zones are in effect year-round including Turkey Creek in Brevard County and Black Creek in Dade County. A similar year-round sanctuary has been proposed for the Big Bend area of Tampa Bay and is expected to be posted in 1986. Other sanctuaries have seasonal speed zones. For example, speed zones on the Withlacoochee River are in effect during the summer season from March 1 through September 30 each year, while speed zones on the nearby Homosassa River are in effect during the winter season from October 1 through March 31 each year. Most of Florida's manatee sanctuary speed zones are in effect during the winter months when the mammals seek warmer waters, generally from November 15 through March 31.

## Reporting Accidents

Boaters reporting animals injured by accidental boat hits are a crucial factor in saving the West Indian manatee. Outside posted zones, accidental hits carry no penalties, and the time saved in getting help for the animal is critical. If you hit a manatee, or come upon a seriously injured manatee, the following steps should be taken:

- note the location
- if possible get another boat to stay with the animal
- notify either the toll-free Resource Alert number 1-800-342-1821; the nearest Florida Marine Patrol office or the nearest local law enforcement agency.



## Boating Speed Zones

To alert the boater and protect the manatee in its sanctuaries, the law provides a number of cautionary and regulatory speed zones. Following are some illustrations and a brief explanation of the various signs:



*Idle Speed Zone* - a zone in which boats are not permitted to go any faster than necessary to be steered; generally these signs appear near the center of a protected manatee sanctuary.



*Slow Speed Zone* - a no-wake or minimum-wake zone where boats must not be on a plane and must be level in the water; generally these signs are posted on the fringe of protected areas to warn you that you are approaching an area frequented by manatees; in some areas the channel is exempt.



*Caution Zone* - a zone frequently inhabited by manatees, requiring caution on the part of boaters to avoid disturbing or injuring the animals.



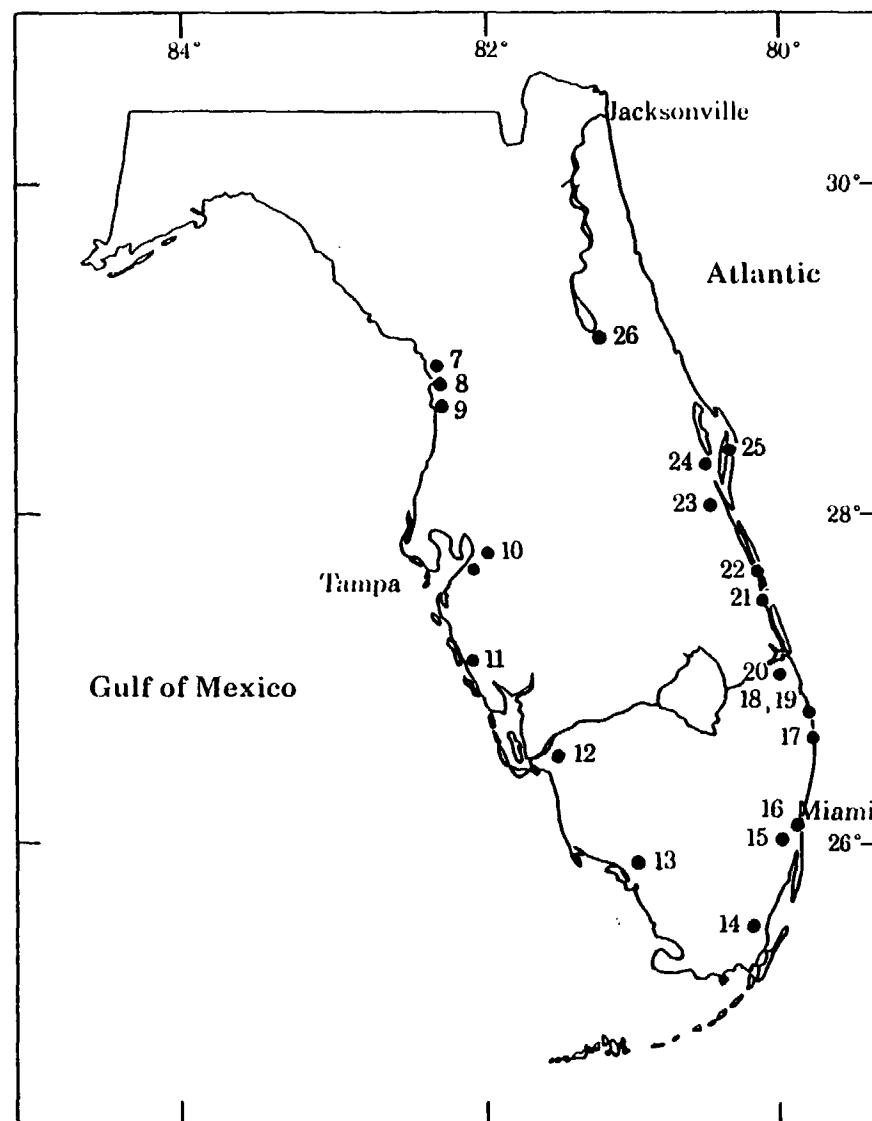
*No Entry Zone* - a protected zone that prohibits boating, swimming and diving for the protection of manatees.



*Safe Operation Zone* - a sign indicating that you may resume safe boating speed; visible as you leave a protected area.

Anyone convicted of violating the law faces the possibility of a maximum fine of \$500 and/or imprisonment of up to 60 days. Conviction on a federal level entails greater fines and/or imprisonment.

## Manatee Sanctuaries in Florida



The blue shaded area indicates the distribution of the West Indian manatee in Florida. Dots indicate protected areas. Numbers refer to the page where a detailed map can be found.

Effective dates of speed zones, as noted on these maps, vary with geographic location. Caution should be exercised year-round in these areas since many manatees remain beyond the posted dates.

**Official Lists of  
Endangered and Potentially  
Endangered Fauna and Flora in Florida**

**1 July 1988**



**FLORIDA GAME AND FRESH WATER FISH COMMISSION**

Compiled by Don A. Wood, Endangered Species Coordinator

Florida Game and Fresh Water Fish Commission

**RECEIVED**

DEC 12 1988

BUREAU OF WASTE CLEANUP

Scientific Name(s)	Common Name	Designated status <sup>1</sup>			
		FGFWFC <sup>2</sup>	FDA <sup>3</sup>	USFWS <sup>4</sup>	CITES <sup>5</sup>
<i>Aquila chrysaetos</i>	Golden eagle				II
<i>Athene cunicularia</i>	Burrowing owl	SSC			
<i>Buteo swainsoni</i>	Swainson's hawk			UR2	
<i>Campephilus principalis</i>	Ivory-billed woodpecker	E		E	
<i>Charadrius alexandrinus tenuirostris</i>	Southeastern snowy plover	T		UR2	
<i>Charadrius melodus</i>	Piping plover	T		T	
<i>Circus cyaneus</i>	Marsh hawk; northern harrier				II
<i>Cistothorus palustris griseus</i>	Worthington's marsh wren	SSC			
<i>Cistothorus palustris marianae</i>	Marian's marsh wren	SSC			
<i>Columba leucocephala</i>	White-crowned pigeon	T		UR2	
<i>Dendroica dominica stoddardi</i>	Stoddard's yellow-throated warbler			UR2	
<i>Dendroica kirtlandi</i>	Kirtland's warbler	E		E	
<i>Egretta caerulea</i>	Little blue heron	SSC			
<i>Egretta rufescens</i>	Reddish egret	SSC		UR2	
<i>Egretta thula</i>	Snowy egret	SSC			
<i>Egretta tricolor</i>	Tricolored heron; Louisiana heron	SSC			
<i>Elanoides forficatus</i>	Swallow-tailed kite			UR2	
<i>Falco columbarius</i>	Pigeon hawk; merlin				II
<i>Falco peregrinus tundrius</i>	Arctic peregrine falcon	E		T	I
<i>Falco sparverius paulus</i>	Southeastern American kestrel	T		UR2	II
<i>Falco sparverius sparverius</i>	Eastern American kestrel				II
<i>Grus canadensis pratensis</i>	Florida sandhill crane	T			II
<i>Haematopus palliatus</i>	American oystercatcher	SSC			
<i>Haliaeetus leucocephalus</i>	Bald eagle	T		E	I
<i>Lanius ludovicianus migrans</i>	Migrant loggerhead shrike			UR2	
<i>Mycteria americana</i>	Wood stork	E		E	
<i>Pandion haliaetus</i>	Osprey	SSC*			II
<i>Pelecanus occidentalis</i>	Brown pelican	SSC			
<i>Picoides borealis</i>	Red-cockaded woodpecker	T		E	
<i>Polioptila caerulea auduboni</i>	Audubon's crested caracara	T		T	
<i>Rallus longirostris insularum</i>	Mangrove clapper rail			UR2	
<i>Rostrhamus sociabilis</i>	Snail kite	E		E	
<i>Sterna antillarum</i>	Least tern	T			
<i>Sterna dougalli</i>	Roseate tern	T		T	
<i>Vermivora bachmani</i>	Bachman's warbler	E		E	

\*Applicable in Monroe County only

#### Mammals

<i>Balaena glacialis</i>	Right whale	E		E	I
<i>Balaenoptera borealis</i>	Sei whale	E		E	II
<i>Balaenoptera physalus</i>	Finback whale	E		E	II
<i>Blarina carolinensis (=brevicauda) shermani</i>	Sherman's short-tailed shrew	SSC		UR2	
<i>Eumops glaucinus floridanus</i>	Florida mastiff bat			UR2	
<i>Felis concolor coryi</i>	Florida panther	E		E	I
<i>Geomys pinetis goffi</i>	Goff's pocket gopher	E		UR3	
<i>Lutra canadensis</i>	River otter				II
<i>Lynx rufus</i>	Bobcat				II
<i>Megaptera novaeangliae</i>	Humpback whale	E		E	I
<i>Microtus pennsylvanicus dukecampbelli</i>	Duke's saltmarsh vole	SSC		UR2	
<i>Mustela frenata peninsular</i>	Florida long-tailed weasel			UR2	
<i>Mustela vison evergladensis</i>	Everglades mink	T		UR2	
<i>Mustela vison latensis</i>	Florida mink			UR2	
<i>Myotis austroriparius</i>	Southeastern bat			UR2	
<i>Myotis grisescens</i>	Gray bat	E		E	
<i>Myotis sodalis</i>	Indiana bat	E		E	
<i>Neofiber alieni</i>	Round-tailed muskrat			UR2	
<i>Neotoma floridana smalli</i>	Key Largo woodrat	E		E	
<i>Odocoileus virginianus clavium</i>	Key deer	E		E	
<i>Oryzomys argentatus</i>	Silver rice rat	E		UR1	
<i>Oryzomys palustris planirostris</i>	Pine Island rice rat			UR2	
<i>Oryzomys palustris sanibeli</i>	Sanibel Island rice rat	SSC		UR2	
<i>Peromyscus floridanus</i>	Florida mouse	SSC		UR2	
<i>Peromyscus gossypinus allapaticola</i>	Key Largo cotton mouse	E		E	

Scientific Name(s)	Common Name	Designated status <sup>1</sup>			
		FGFWFC <sup>2</sup>	FDA <sup>3</sup>	USFWS <sup>4</sup>	CITES <sup>5</sup>
<i>Peromyscus gossypinus anastasiae</i>	Anastasia Island cotton mouse			UR2	
<i>Peromyscus gossypinus restrictus</i>	Chadwick Beach cotton mouse	E		UR2	
<i>Peromyscus polionotus allophrys</i>	Choctawhatchee beach mouse	E		E	
<i>Peromyscus polionotus decoloratus</i>	Pallid beach mouse	E		UR3	
<i>Peromyscus polionotus leucocephalus</i>	Santa Rosa beach mouse			UR2	
<i>Peromyscus polionotus niveiventris</i>	Southeast beach mouse			UR2	
<i>Peromyscus polionotus peninsularis</i>	St. Andrews beach mouse			UR2	
<i>Peromyscus polionotus phasma</i>	Anastasia beach mouse			UR2	
<i>Peromyscus polionotus trissyllepsis</i>	Perdido Key beach mouse	E		E	
<i>Physter catodon</i>	Sperm whale	E		E	
<i>Plecotus rafinesquii</i>	Southeastern big-eared bat			UR2	
<i>Procyon lotor auspicatus</i>	Key Vaca raccoon			UR2	
<i>Procyon lotor incaytus</i>	Key West raccoon			UR2	
<i>Scalopus aquaticus anastasiae</i>	Anastasia Island mole			UR2	
<i>Scalopus aquaticus bassi</i>	Englewood mole			UR2	
<i>Sciurus niger avicennia</i>	Big cypress fox squirrel	T		UR2	
<i>Sciurus niger shermani</i>	Sherman's fox squirrel	SSC		UR2	
<i>Sigmodon hispidus exspitus</i>	Lower Keys cotton rat			UR5	
<i>Sigmodon hispidus insulicola</i>	Insular cotton rat			UR2	
<i>Sigmodon hispidus littoralis</i>	Micco cotton rat			UR2	
<i>Sorex longirostris cionis</i>	Homosassa shrew	SSC		UR2	
<i>Sylvilagus floridanus ammodontus</i>	Micco cottontail rabbit			UR2	
<i>Sylvilagus palustris hefneri</i>	Lower Keys rabbit			UR2	
<i>Tamias striatus</i>	Eastern chipmunk	SSC			
<i>Trichechus manatus latirostris</i>	West Indian manatee	E		E	I
<i>Ursus americanus floridanus</i>	Florida black bear	T*		UR2	

\*Not applicable in Baker and Columbia counties and Apalachicola National Forest

*Crane Creek*

THE DISTRIBUTION OF SEVEN TRACE METALS IN THE CLAM,  
Mercenaria mercenaria FROM THREE EAST COAST FLORIDA LAGOONS

Conrad B. White  
Marine Biologist  
Environmental Engineering Department  
Environmental Services Division

**RECEIVED**

JAN 3 1989

BUREAU OF WASTE CLEANUP  
Twin Towers



results for Cd were insufficient to allow correlation *Crane Creek* physical or biological factors.

## DISCUSSION

In the present study, Mercenaria mercenaria was selected not only to determine accumulated trace metals and their possible effect on local human toxicity, but also to determine if M. mercenaria could serve as a substitute for Mytilus edulis in terms of the world-wide "Mussel Watch" sentinel program because the latter was not found within the immediate area. Like M. edulis, M. mercenaria partially feeds on organic fines (Meglitsch, 1972; Sparks, 1972; Purchon, 1977) which are documented as the principle site of trace metal adsorption (Windom et al., 1976). They have the same ability to uptake and concentrate dissolved metals as did M. edulis (Latouche and Mix, 1982). M. mercenaria's role in recycling of sediment bound trace metals and metals associated with detrital material released from adjacent salt marshes, through the clam's deposition of feces and pseudofeces has not been quantified (Meglitsch, 1972; Banus et al. 1974; Purchon, 1977). There was some evidence that suggests that bivalve tissue levels do not necessarily mimic sediment metal loads. It was therefore suggested that any results from a sentinel program should be treated with caution if correlations with sediment metal loads are to be made (Huggett et al., 1975; Jenkins, 1981; Hungspreugs, 1984).

The association of detrital material and metal input has been established as being important because of the

data from a survey for heavy metals in M. mercenaria from the Indian River during 1970 showed an increase in several metals, notably Cr, Cu and Pb (Table 7; Florida HRS, data from survey performed in 1970); the data from the 1970 survey was suspect, however, as no information was available to describe the methods used for analysis.

Elevated Ag, Cu, Pb and Zn concentrations at station CC, which was located at the confluence of Crane Creek and the Indian River, were correlated with the combination of a large sewage treatment plant that discharges into the creek, a recreational boat marina at the mouth of the creek and stormwater runoff from the curb and gutter systems within the city of Melbourne. The station located at the confluence of Turkey Creek and the Indian River (I-10) had elevated Ag and Cu tissue levels which were attributed to the discharge from an electronic circuit board manufacturer that discharges wastewater into the upper regions of the creek, and a recreational boat marina near the mouth of the creek (Fig. 1).

A comparison between other stations with sewage treatment plants and stormwater discharges within short distances (I-4, I-7a, B6, 22a and S-1) indicated the discharges reflected the dominant contributors to that particular system in terms of trace metals. Those with industrial input, power and asphalt plants and/or extensive curb and gutter stormwater systems, showed slightly elevated levels of certain metals, namely Ag, Cr, Cu, and Pb, while those receiving input from predominantly residential areas showed overall lower metal levels. The

Hg with the manual cold-vapor method with a Coleman MAS-50 mercury analyzer. Tissue concentrations of Cu and Zn were determined with direct aspiration on a Perkin Elmer model 380 AA with an air-acetylene mixture. An HGA graphite furnace, model 400, was utilized for determining Ag, Cd, Cr, and Pb. Standard curves and spikes were made with Ricca 1000 mg/l stock solutions and the recoveries were greater than 85%.

The uncertainty associated with using bivalves for metal monitoring, because of the variability due to their size, sex and population differences was lessened by pooling individuals from a single sample site into one sample (Meeus-Verdinee, 1983). The pooled bivalve sample was needed in this study to overcome changes in phytoplankton variability and individual feeding rates (Quick and Blair, 1971; Mackay et al., 1975; Boalch et al., 1981; Latouche and Mix, 1982; Riisgard, 1984). The variation due to sex was deemed too small for separating individuals (Latouche and Mix, 1982), nor was depuration deemed necessary.

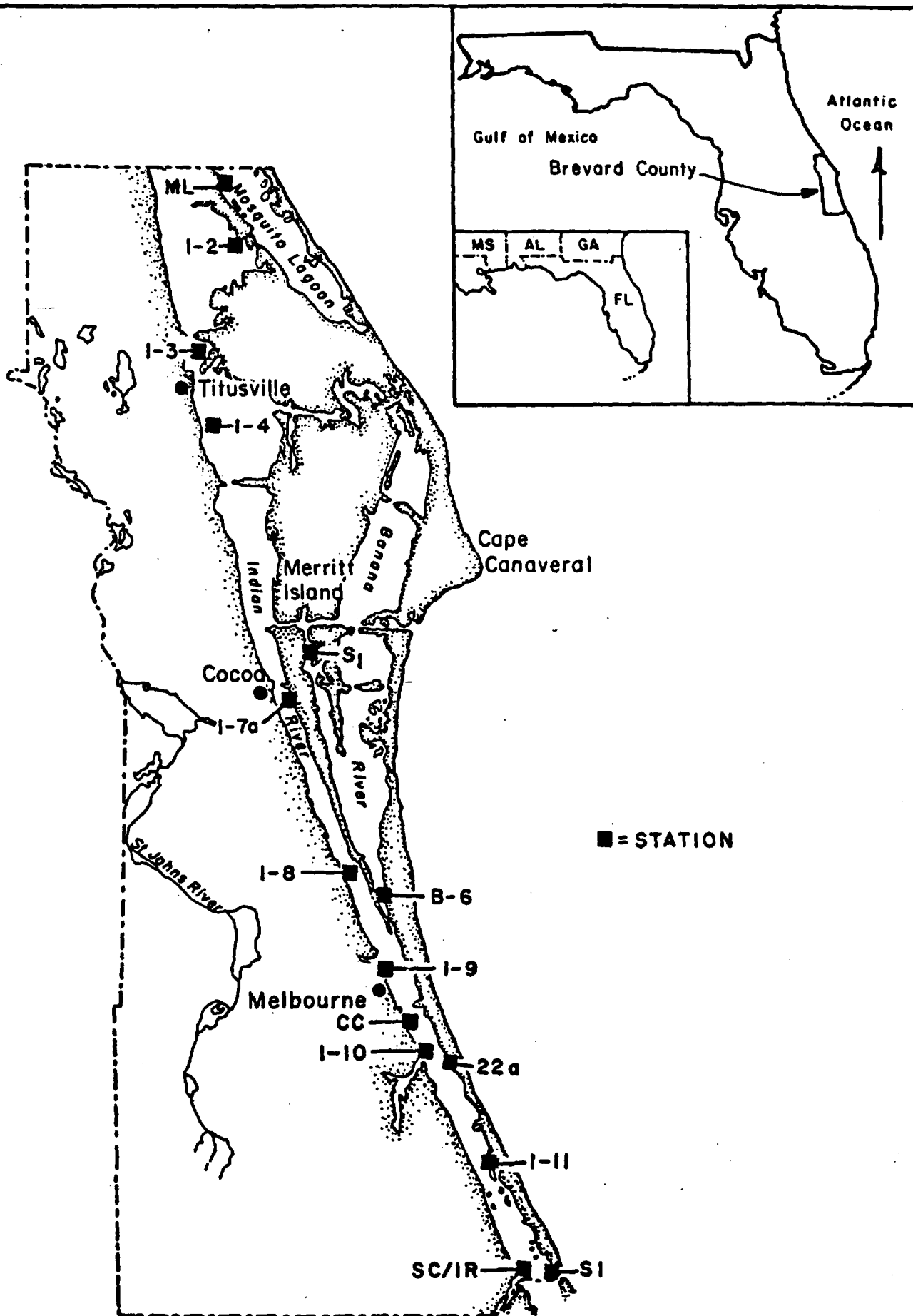
## RESULTS

The results of this survey are summarized in Table 5. For the most part, the values are below the maximum metal concentrations reported elsewhere (Table 6). Those sites that were in close proximity to suspected pollutant discharges showed slightly elevated metal concentrations, notably Ag, Cu, Pb and Zn (stations CC, I-10, and B6), over what was considered background levels (stations ML and SI). Comparison of the data generated from the present survey with historical

TABLE 5

TRACE METALS IN Mercenaria mercenaria (mg metal/kg dry wt.)

STATION	Ag	Cd	Cr	Cu	Hg	Pb	Zn
ML	2.34	0.26	3.29	5.57	0.07	4.09	248.4
I-2	0.50	0.20	2.19	12.45	-. -	3.70	233.1
I-3	1.47	0.34	2.64	19.06	0.04	2.79	167.8
I-4	1.89	-. -	21.80	100.54	0.09	8.60	189.9
I-7a	1.83	0.05	4.23	8.72	0.98	6.38	157.9
I-8	2.09	0.32	1.24	40.46	0.32	8.11	256.8
I-9	3.57	0.22	5.75	28.39	0.02	4.57	170.7
CC	32.14	-. -	-. -	241.3	-. -	28.06	4588.8
I-10	9.24	0.03	2.90	41.02	0.62	4.61	257.5
22a	5.01	0.52	2.03	16.84	0.07	6.11	17.0
I-11	1.94	0.26	5.45	9.24	0.17	8.57	279.4
SC/IR	1.71	0.25	13.39	7.47	0.02	10.48	1207.6
SI	0.41	0.18	2.84	14.73	0.92	0.60	71.5
S-1	1.33	-. -	3.39	13.44	0.05	2.67	226.5
B-6	4.28	0.40	3.03	35.86	0.02	9.08	225.2
n	15	12	14	15	13	15	15
X	4.65	0.25	5.30	39.67	0.26	7.23	553.2
S	7.92	0.14	5.60	60.70	0.35	6.41	1148.8
R	0.31- 32.14	0.03- 0.52	1.24- 21.80	5.57- 241.30	0.02- 0.98	0.60- 28.06	17.0- 4588.8



CONVERSATION RECORD

Date: 12/28/88  
Time: 3pm

File Name: Brevard Sludge Spreading Sites.  
Contact Person: Conrad White - Brevard Cty.  
Nat. Resources  
Phone No.: 407) 632-6010  
Subject: Heavy metals at the mouth of Crane  
Creek.

---

Conrad White stated that elevated silver, copper, lead and zinc were found in sediment samples taken at the confluence of Crane Creek and the Indian River. These metals were presumed to be from the effluent from the Grant St. waste water treatment plant and also from storm water runoff.

According to County Biologist Bob Day who is a co-worker of Conrad PCBs were found in the sediments when Crane Creek was dredged. The spoil was sent to Alabama for disposal. Origin of PCBs was unknown.

Brian M. Moore

In some places where streams have cut across the Atlantic Coastal Ridge, the ground-water divide will follow around the drainage basin of the stream.

In Brevard County the ground water in the nonartesian aquifer generally moves eastward and westward, away from the divide. The gradient from the divide (center of Mims profile) eastward to the Indian River is about 20 feet to the mile (fig. 42). From the divide at Mims westward to the

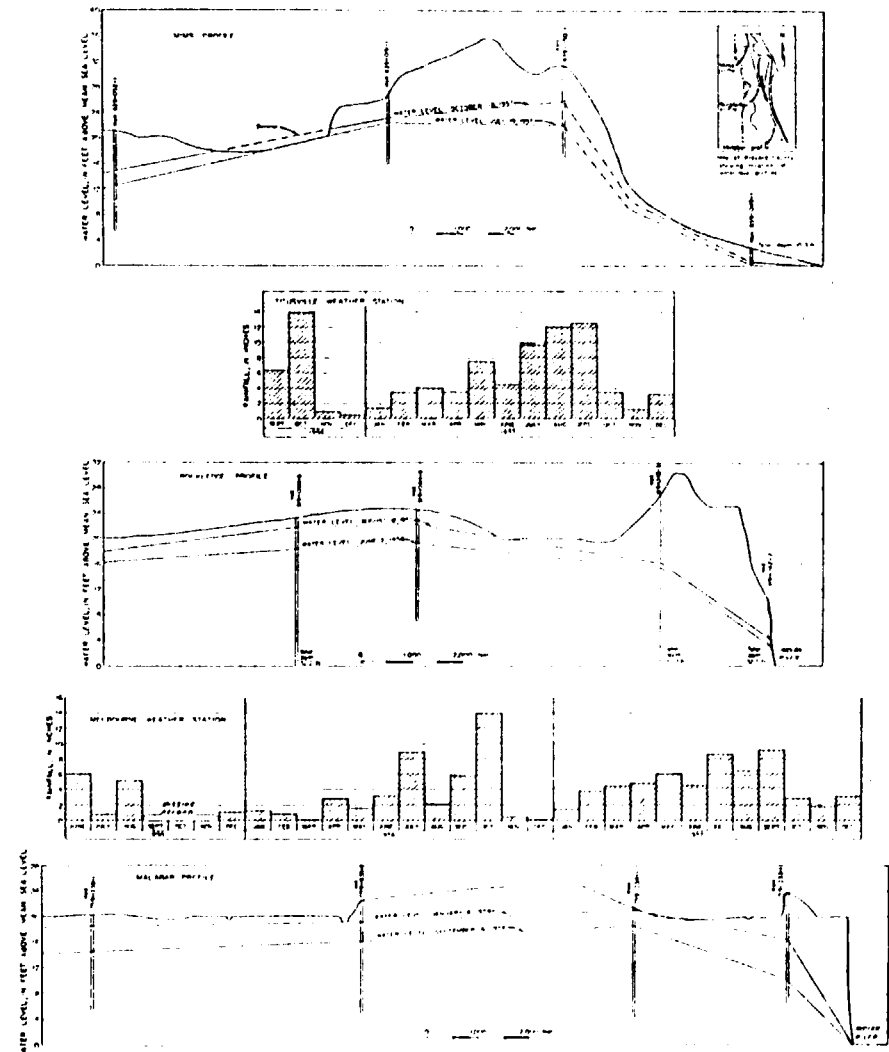


Figure 42. Water-table profiles across the Atlantic Coastal Ridge near Mims, Rockledge, and Malabar, Florida.

## Appendix

Unlisted (Characteristic) Hazardous Wastes

(40 CFR Part 261, Subpart C)

and

Lists of Hazardous Wastes

(40 CFR Part 261, Subpart D)



# HANDBOOK OF TOXIC AND HAZARDOUS CHEMICALS AND CARCINOGENS

Second Edition

by

**Marshall Sittig**

Princeton University

dent and Managing  
chemical and Process  
with E.I. Du Pont de  
uring, Ethyl Corpo-  
and Princeton Uni-  
ns.



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STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

Criteria for Water) was published. On November 28, 1980 (45 FR 79318), and February 15, 1984 (49 FR 5831), EPA announced through Federal Register notices, the publication of 65 individual ambient water quality criteria documents for pollutants listed as toxic under section 307(a)(1) of the Clean Water Act. On July 29, 1985 (50 FR 30784), EPA published additional water quality criteria documents.

The development and publication of ambient water quality criteria has been pursued over the past 10 years and is an ongoing process. EPA expects to publish about 10 final criteria documents each year. Some of these will update and revise existing criteria recommendations and others will be issued for the first time.

In a continuing effort to provide those who use EPA's water quality and human health criteria with up-to-date criteria values and associated information, this document Quality Criteria for Water 1986 was assembled. This document includes summaries for all the contaminants for which EPA has developed criteria recommendations (Appendix A-C). The appropriate appendix is identified at the end of each summary. A more detailed description of these procedures can be found in the appropriate Appendix. Copies of this document can be obtained by contacting the U.S. Government Printing Office at:

U.S. Government Printing Office  
Superintendent of Documents  
N. Capitol and H Street N.W.  
Washington, D.C. 20401

A fee is charged for this document.

Copies of the complete background ambient water quality

WINDSHIELD SURVEY FORM

Date: 9/22/88  
Surveyed by: Brian Moore

1. Site Name Evans Property Site #6 - Mall Site

Correct Address \_\_\_\_\_

Phone # \_\_\_\_\_

EPA ID # FLD \_\_\_\_\_

Type of business/industry Commercial

2. Directions to the Site \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

3. Check if present on site and use the space provided to describe:

a. storage tanks (above/below ground; how many; condition) \_\_\_\_\_

b. berms (material/condition) \_\_\_\_\_

c. drums (covered/uncovered; on/off the ground; condition; number; labels) \_\_\_\_\_

d. other storage containers \_\_\_\_\_

e. impoundments/pits/ponds Storm Retention Pond

f. piles on ground (material; covered/uncovered) \_\_\_\_\_

g. dumpster/bulk waste container \_\_\_\_\_

h. air stacks \_\_\_\_\_

i. air emissions/odor (wind direction) \_\_\_\_\_

j. posted signs (which ones; location) \_\_\_\_\_

k. sprayfield/ drainfield \_\_\_\_\_

l. pesticide storage \_\_\_\_\_

m. evidence of past fire/fire protection equipment \_\_\_\_\_

n. soil discoloration \_\_\_\_\_

Windshield Survey Form (Continued)

- o. surface water (type) \_\_\_\_\_
- p. buildings (how many) \_\_\_\_\_
- q. sheds (how many) \_\_\_\_\_
- r. drainage ditches/pipes \_\_\_\_\_
- s. wells (monitoring/drinking) \_\_\_\_\_
- t. septic tank \_\_\_\_\_
- u. spills (describe) \_\_\_\_\_
- v. sewers/manholes \_\_\_\_\_
- w. railroad tracks \_\_\_\_\_
- x. flora (describe) \_\_\_\_\_
- y. fauna (describe) \_\_\_\_\_
- z. water supply \_\_\_\_\_
- aa. other \_\_\_\_\_
- bb. other \_\_\_\_\_
- cc. other \_\_\_\_\_
- dd. other \_\_\_\_\_

4. Check if present off site and use the space provided to describe:

- a. soil discoloration \_\_\_\_\_
- b. surface water \_\_\_\_\_
- c. drainage ditches \_\_\_\_\_
- d. sewer systems/manholes \_\_\_\_\_
- e. spills (describe) \_\_\_\_\_
- f. leachate \_\_\_\_\_
- g. flora \_\_\_\_\_
- h. fauna \_\_\_\_\_
- i. municipal/domestic water supply \_\_\_\_\_
- j. other \_\_\_\_\_
- k. other \_\_\_\_\_

Windshield Survey Form (Continued)

4. Check if present off site...(Continued)

l. other \_\_\_\_\_

m. other \_\_\_\_\_

5. Access:

a. Is the site fenced (describe)? No

b. Is access restricted? No

c. Is the site guarded? No

d. Comments \_\_\_\_\_

6. Is the site active/abandoned? \_\_\_\_\_

7. Surrounding community (describe land use and type of industries adjacent to the site; proportions):

a. industrial \_\_\_\_\_

b. commercial 70%

c. residential 20%

d. rural/farms \_\_\_\_\_

e. rural/woods 10%

f. the closest business/residence is: (give name, address and distance)

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

g. comments \_\_\_\_\_

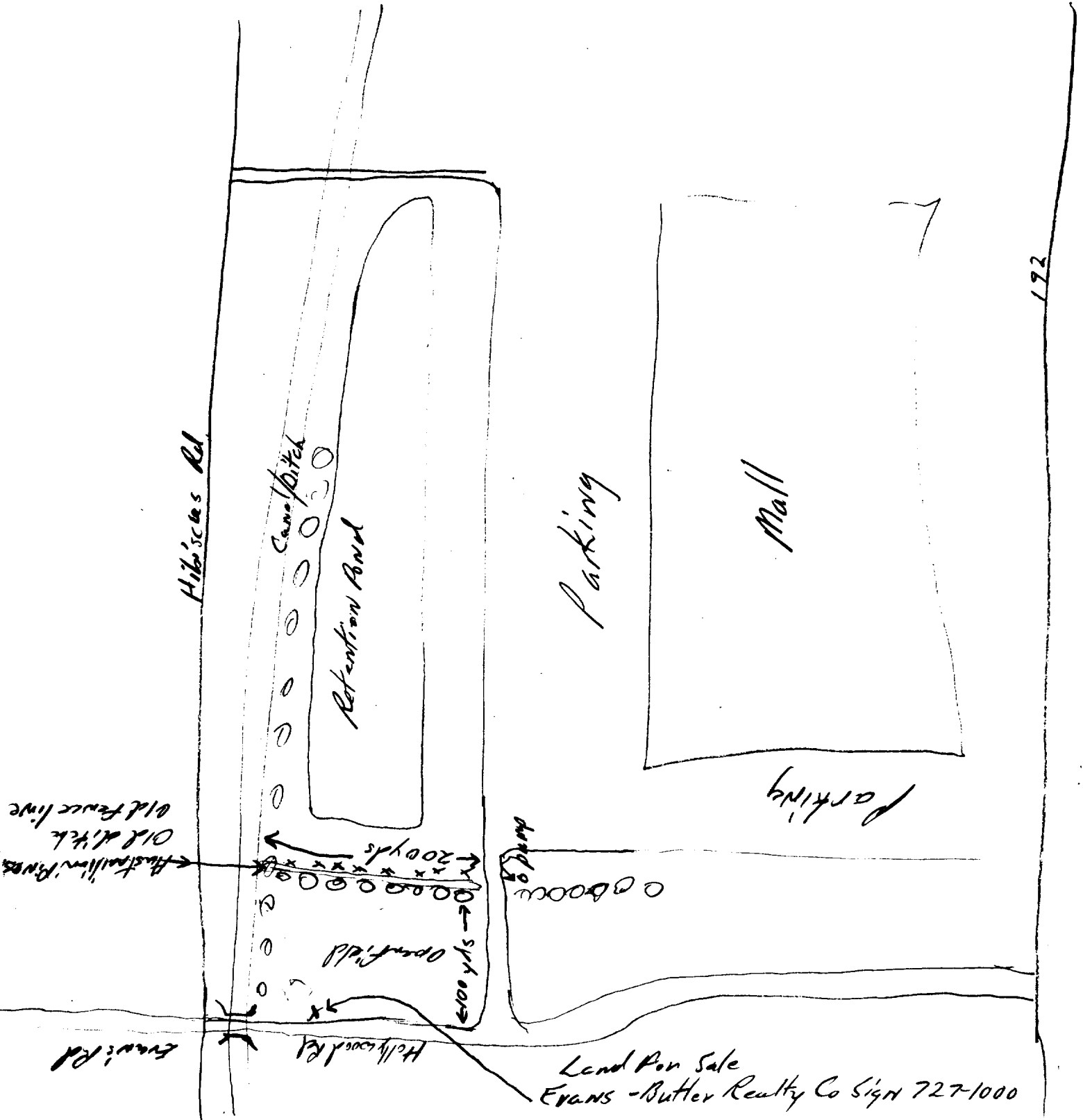
\_\_\_\_\_

\_\_\_\_\_

Windshield Survey Form (Continued)

8. Site sketch: (show North on map)

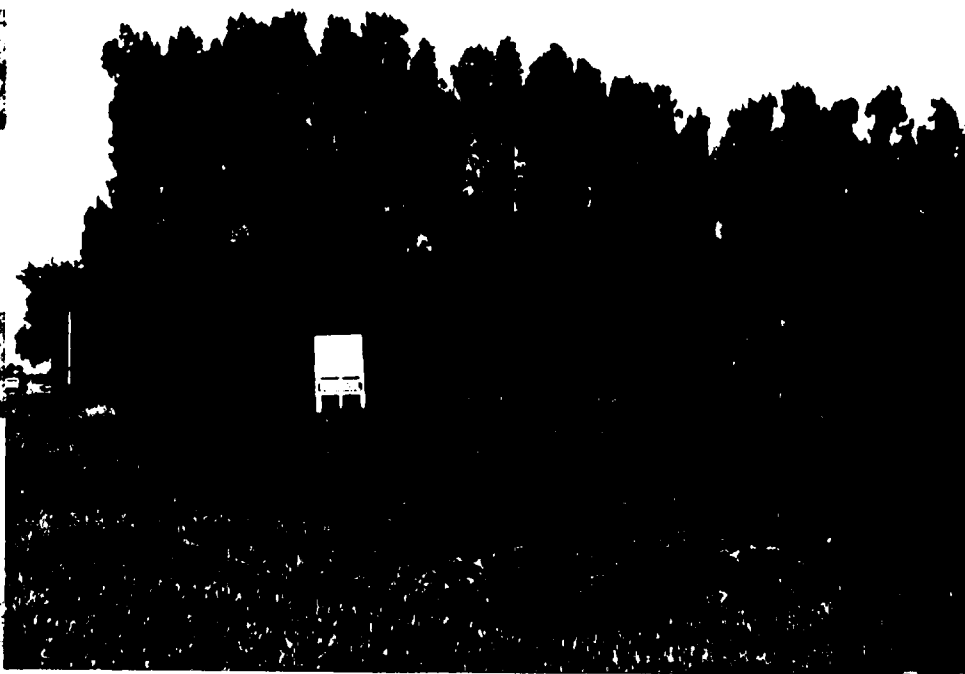
Hibiscus Air  
Gateway Air



Windshield Survey Form (Continued)

9. Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

10. Recommendations: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_





*City of Melbourne*

(305) 727-2900



900 East Strawbridge Avenue

Melbourne, Florida  
32901

- Reference 15

December 9, 1988

Mr. Brian Moore  
Florida Department of Environmental Regulation  
Bureau of Waste Cleanup  
2600 Blair Stone Road  
Tallahassee, Florida 32399-2400

Dear Mr. Moore:

Enclosed is all the information my staff could find regarding your request of November 1, 1988. I hope this information aids you in your file updating.

If I can be of further assistance, do not hesitate to contact me.

Sincerely,

Robert C. Klaproth, Jr.  
Water/Sewer Administrator

RCK/ah  
enclosed

M E M O


TO : BOB KLAPROTH  
ADMINISTRATOR/WS

THRU : FRED DUNHAM  
SUPERINTENDENT/WWTP

FROM : RANDALL GREER  
IPP COORDINATOR

DATE : NOVEMBER 14, 1988

SUBJECT : SLUDGE SPREADING SITES



---

Prior to the start up of the belt filter press @ D.B. Lee and Grant Street, digested sludge was disposed of via land spreading with tank trucks.

Hauling seven days a week, the average rate of spread was 4.4 M.G. per week over the course of a year.

The sludge quality was Grade II, due to industrial contributors.

Advanced Board Circuitries contributed copper to the D.B. Lee POTW while FAR-MAC Plating contributed Nickel to Grant Street.

  
RANDALL GREER

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BUREAU OF WASTE CLEANUP  
Twin Towers

Chemical Criteria in mg/kg dry weight

Parameter	Grade		
	I	II	III
Cadmium	<=30	30--100	>100
Copper	<=900	900--3000	>3000
Lead	<=1000	1000--1500	>1500
Nickel	<=100	100--500	>500
Zinc	<=1800	1800--10000	>10,000

SLUDGE QUALITY D.B.LEE WWTTP

DATE	Cd mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Zn mg/kg	Tot.N %	Tot.P %	Tot.K %	Ph	Solids %
8/23/84	4.68	4799.00	598.00	548.00	1216.00	1.42	2.89	0.84	6.80	0.75
10/18/84	10.00	3802.00	350.00	317.00	475.00	0.09	2.53	0.07	6.20	0.63
6/4/85	3.60	750.00	90.00	32.00	640.00	5.92	5.86	0.69	6.70	0.64
10/11/85	3.56	954.00	62.50	126.00	795.00	1.45	0.30	0.29	6.40	0.71
4/25/86	1.61	709.00	47.10	98.90	396.00	1.60	1.82	0.34	6.60	0.73
6/6/86	2.55	828.00	75.40	29.90	840.00	4.25	1.76	0.81	6.30	0.84
8/1/86	0.00	220.00	20.60	13.00	670.00	5.07	1.65	0.21	6.20	0.69
10/24/86	0.00	763.00	69.20	29.90	577.00	4.11	6.19	2.90	5.80	0.88
1/22/87	3.30	1715.00	110.00	77.30	460.00	7.66	2.16	1.15	6.40	0.44
4/17/87	1.90	405.00	46.60	7.80	660.00	6.60	2.30	0.33	6.30	0.90
8/21/87	6.43	2160.00	143.00	56.80	1040.00	4.50	1.60	0.40	5.80	0.72
9/18/87	-	1280.00	-	-	-	-	-	-	-	-
12/24/87	3.92	1090.00	129.00	43.20	790.00	1.20	0.30	0.16	6.30	0.77
3/10/88	5.21	1460.00	153.00	39.20	509.00	0.33	0.11	0.40	6.50	0.78
7/29/88	3.00	1400.00	115.00	20.50	400.00	5.38	2.29	0.52	6.60	0.55
AVE	3.55	1595.36	143.54	102.82	677.71	3.70	2.27	0.65	6.35	0.72

Chemical Criteria in mg/kg dry weight

Sludge Grade

Parameter	I	II	III
Cadmium	<=30	30--100	>100
Copper	<=900	900--3000	>3000
Lead	<=1000	1000--1500	>1500
Nickel	<=100	100--500	>500
Zinc	<=1800	1800--10000	>10000

SLUDGE QUALITY: Grant Street WWTP

DATE	Cd mg/kg	Cu mg/kg	Pb mg/kg	Ni mg/kg	Zn mg/kg	Tot.N %	Tot.P %	Tot.K %	Solids %	pH
8/23/84	2.18	250.00	162.00	109.00	573.00	0.67	2.25	0.12	2.06	7.00
10/18/84	1.00	280.00	35.00	235.00	752.00	0.04	1.80	0.03	2.13	6.20
6/4/85	5.50	290.00	60.00	235.00	930.00	1.61	3.05	0.13	2.44	6.50
10/11/85	2.15	138.00	16.10	110.00	448.00	0.46	0.67	0.51	2.85	5.70
4/18/86	2.60	252.00	29.20	113.00	566.00	4.20	0.11	0.31	2.43	6.40
5/23/86	-			72.90						
6/6/86	2.79	207.00	48.20	61.20	550.00	3.01	0.70	0.21	2.70	6.30
8/1/86	1.72	75.00	31.00	36.00	400.00	4.00	0.06	0.17	1.76	6.20
10/24/86	0.00	144.00	33.30	42.50	442.00	1.68	1.48	4.82	1.76	5.70
1/22/87	2.30	159.00	58.00	25.20	413.00	1.05	0.13	1.28	0.86	6.50
4/17/87	1.80	127.00	37.20	18.80	405.00	6.50	0.66	0.11	2.57	5.50
7/22/87	2.46	226.00	29.00	35.70	598.00	3.00	0.50	0.10	2.35	6.30
12/24/87	1.82	174.00	54.50	25.30	518.00	1.30	0.26	0.08	3.00	5.50
3/31/88	4.40	346.00	88.80	44.30	782.00	0.76	0.27	0.56	0.82	6.80
7/29/88	5.00	465.00	76.00	19.00	900.00	3.22	0.45	0.43	1.70	6.40
AVE	2.55	223.79	54.16	76.66	591.21	2.25	0.66	0.63	2.10	6.21

McCLENONS PROPERTY  
FLD980556484  
PRELIMINARY ASSESSMENT

- A. SITE DESCRIPTION. The McClenons Property site (site #3) is located on Florida Ave. (off Dairy Road), Melbourne, Brevard County, Florida (Fig. 1) [3,6]. This site accepted electroplating sludge containing lead and chromium. It began operation in 1979 and closed in 1981 [3].
- B. DESCRIPTION OF HAZARDOUS CONDITIONS, INCIDENTS AND PERMIT VIOLATIONS. McClenons Property is one of 8 sites where the City of Melbourne disposed electroplating sludge [3]. The other 7 sites had Preliminary Assessments written in 1982 [3].

Chromium (total, trivalent and hexavalent) and lead are commonly used in electroplating [5]. Chromium electroplating processes use insoluble lead alloy anodes. Chromium is a common metal constituent used in anodizing baths, which results in high chromium levels in waste streams. Pickling or acid cleaning solutions frequently contain chromic acid. Significant pollutants and pollutant properties from electroplating operations are pH, total suspended solids, cyanide, chromium, copper, nickel, zinc, cadmium, lead and various precious metals and organic compounds [5]. Metals that are not destroyed in the process are incorporated into sludge. These metals could contaminate the air, water and in some cases enter the human food chain. Metals incorporated in the sludge can have detrimental effects which limit the amount of sludge which can be applied to cropland. Data indicate that sludge containing lead, when applied to cropland, may increase the lead concentration in crops grown on acid soils [5].

No additional information is currently available for this site and no samples have been collected to date.

- C. RCRA STATUS. This site has no official RCRA status. However, the wastes disposed at the site may be RCRA regulated and therefore this report will be forwarded to RCRA personnel for their review.
- D. NATURE OF HAZARDOUS MATERIALS. Chromium and lead are suspected carcinogens and are used in the electroplating industry [4,5]. Exposure to chromium compounds (chromic acid) can lead to lesions, ulcers and damage to the respiratory tract [4,7]. Hexavalent chromium is corrosive and a potent human skin sensitizer [5]. Lead is bioaccumulative, toxic and persistent [4,5,7]. Cyanide, a common component of electroplating wastewaters, is toxic and affects the liver and kidneys [5,12].

- E. ROUTES OF CONTAMINATION. Groundwater and surface water are potential routes of contamination. Direct contact is another potential route.
- F. POSSIBLE AFFECTED POPULATION AND RESOURCES. The major source of groundwater in Brevard County (used mostly for irrigation) is the limestone formations of the artesian Floridan aquifer [1,2]. This aquifer, from top to bottom, consists of the Crystal River, Williston and the Inglis formations. The Crystal River formation (up to 100 feet thick) is a white to cream colored, soft, brittle limestone which underlies the southern part of Brevard County. The Williston formation (approx. 30 feet) is a cream colored marine limestone. The Inglis formation (50-100 feet) is the same composition as the Williston formation, with the exception of being more granular [1]. The Floridan aquifer sets approximately 250 feet below grade at McClenons Property and is overlain by a sand and clay confining layer [1,2]. The Pleistocene and Recent sand/shell deposits form a surficial aquifer that serves as an alternate source of water for domestic uses not supplied by municipal water systems [1].

Groundwater flow in the surficial aquifer can vary due to the proximity of the site to a water table divide [1].

The major source of drinking water for the residents of Melbourne comes from Lake Washington, whose intakes are more than 3 miles from McClenons Property (Fig. 1)[3,6,8]. The nearest surface waters are 100 feet to 1/4 mile from the site (Fig. 1) [6].

There are at least 47 private drinking water wells within 3 miles of the site and the nearest well (Floridan aquifer) is within 1 mile of the site [6,9].

- G. RECOMMENDATIONS AND JUSTIFICATIONS. The aquifer of concern (Floridan aquifer) is confined and is more than 250 feet deep in the area [1,2]. The potential for contaminants to infiltrate down to the aquifer is extremely low [1,2].

Since few wells or surface water intakes are nearby and a low population is potentially affected, we recommend a no further action for CERCLA Site Screening Inspection and request that the site be forwarded to RCRA for appropriate action.

EPA FORM 2070-12(7-81)

EPA

POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 2 -WASTE INFORMATION

## IDENTIFICATION

01 STATE 02 SITE NUMBER  
FL D980556484

## II. WASTE STATES, QUANTITIES, AND CHARACTERISTICS

## 01 PHYSICAL STATES (Check all that apply)

- ☐ A. SOLID                      ☐ E. SLURRY  
☐ B. POWDER, FINES          ☐ F. LIQUID  
☒ C. SLUDGE                   ☐ G. GAS

☐ OTHER \_\_\_\_\_  
 (Specify)

## 02 WASTE QUANTITY AT SITE

(Measures of waste quantities must be independent)

TONS unknown  
 CUBIC YARDS unknown  
 NO. OF DRUMS unknown

## WASTE CHARACTERISTICS

(Check all that apply)

- ☒ A. TOXIC                      ☐ G. FLAMMABLE  
☒ B. CORROSIVE                ☐ H. IGNITABLE  
☐ C. RADIOACTIVE              ☐ I. HIGHLY VOLATILE  
☒ D. PERSISTENT               ☐ J. EXPLOSIVE  
☐ E. SOLUBLE                   ☐ K. REACTIVE  
☐ F. INFECTIOUS               ☐ L. INCOMPATIBLE  
☐ M NOT APPLICABLE

## III. WASTE TYPE

CATEGORY	SUBSTANCE NAME	01 GROSS AMOUNT	02 UNIT OF MEASURE	03 COMMENTS
SLU	SLUDGE			Electroplating sludge containing heavy metals (lead and chromium) has been disposed of at this site [3,5].
OLW	OILY WASTE			
SOL	SOLVENTS			
PSD	PESTICIDES			
OCC	OTHER ORGANIC CHEMICALS			
IOC	INORGANIC CHEMICALS			
ACD	ACIDS			
BAS	BASES			
MES	HEAVY METALS	unknown	N/A	Chromium and lead are suspected carcinogens and are commonly used in the electroplating industry [5,7].

## IV HAZARDOUS SUBSTANCES (See appendix for most frequently cited CAS Numbers)

01 CATEGORY	02 SUBSTANCE NAME	03 CAS NUMBER	04 STORAGE/DISPOSAL METHOD	05 CONCENTRATION	06 REFERENCES
MES	chromium	7440-47-3	in sludge/unknown		[3]
MES	lead	7439-92-1	in sludge/unknown		[3]

## V. FEEDSTOCKS (See Appendix for CAS Numbers) N/A

CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER	CATEGORY	01 FEEDSTOCK NAME	02 CAS NUMBER
FDS			FDS		
FDS			FDS		
FDS			FDS		
FDS			FDS		

## VI. SOURCES OF INFORMATION (Cite specific reference, e.g., state files, sample analysis, reports)

Bureau of Operations, FDER files, and attached reference list.



EPA		POTENTIAL HAZARDOUS WASTE SITE PRELIMINARY ASSESSMENT		IDENTIFICATION	
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND ACCIDENTS				01 STATE FL	02 SITE NUMBER D980556484
<b>II. HAZARDOUS CONDITIONS AND INCIDENTS (continued)</b>					
01 <u>  </u> J. DAMAGE TO FLORA	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  None reported.					
01 <u>  </u> K. DAMAGE TO FAUNA	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  None reported.					
01 <u>X</u> L. CONTAMINATION OF FOOD CHAIN	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>X</u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  Sludge containing lead or chromium, when applied to cropland, can have detrimental effects on the yield and increase the concentrations of contaminants in the crop [5]. Lead is bioaccumulative [4,5].					
01 <u>  </u> M. UNSTABLE CONTAINMENT OF WASTES (Spills/runoff/standing liquids/leaking drums)	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
03 POPULATION POTENTIALLY AFFECTED: <u>          </u> 04 <u>  </u> NARRATIVE DESCRIPTION  None reported.					
01 <u>  </u> N. DAMAGE TO OFFSITE PROPERTY	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  None reported.					
01 <u>  </u> O. CONTAMINATION OF SEWERS, STORM DRAINS, WWTPs	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  None reported.					
01 <u>  </u> P. ILLEGAL/UNAUTHORIZED DUMPING	02 <u>  </u> OBSERVED (DATE: <u>      </u> )	<u>  </u> POTENTIAL	<u>  </u> ALLEGED		
04 NARRATIVE DESCRIPTION  None reported.					
05 DESCRIPTION OF ANY OTHER KNOWN, POTENTIAL, OR ALLEGED HAZARDS  None reported.					
III. TOTAL POPULATION POTENTIALLY AFFECTED: <u>          1-100          </u>					
<b>IV. COMMENTS</b>					
McClenons property accepted electroplating sludge containing lead and chromium from 1979 to 1981 [3]. Residents of Melbourne receive their drinking water from Lake Washington [8], which is more than 3 miles from the site [6]. The aquifer of concern (Floridan aquifer) is confined and more than 250 feet deep in this area. The potential for contaminants to infiltrate down to the aquifer is extremely low [1,2].					
<b>V. SOURCES OF INFORMATION (Cite specific reference, e.g., state files, sample analysis, reports)</b>					
FDER files, also see attached reference list.					

EPA

POTENTIAL HAZARDOUS WASTE SITE  
PRELIMINARY ASSESSMENT  
PART 3 - DESCRIPTION OF HAZARDOUS CONDITIONS AND ACCIDENTSIDENTIFICATION  
01 STATE 02 SITE NUMBER  
FL D980556484

## II. HAZARDOUS CONDITIONS AND INCIDENTS

01 ☒ A. GROUNDWATER CONTAMINATION 02 OBSERVED(DATE: ) ☒ POTENTIAL ☐ ALLEGED03 POPULATION POTENTIALLY AFFECTED: 1-100 04 NARRATIVE DESCRIPTION  
The Floridan aquifer sets at 250 feet below grade and is overlain by sand and clay at the McClenons property site and, therefore, is not susceptible to contamination [1]. Residents with private wells screened in the surficial (sand/shell) aquifer are potentially at risk [1,3,5,7,12]. No samples have been collected.01 B. SURFACE WATER CONTAMINATION 02 OBSERVED(DATE: ) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

None reported.

01 C. CONTAMINATION OF AIR 02 OBSERVED(DATE: ) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

None reported.

01 D. FIRE/EXPLOSIVE CONDITIONS 02 OBSERVED(DATE: ) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

None reported.

01 E. DIRECT CONTACT 02 OBSERVED(DATE: ) ☐ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

Remote potential. The site is located in an undeveloped and rural area [3,6,14].

01 ☒ F. CONTAMINATION OF SOIL 02 OBSERVED(DATE: ) ☒ POTENTIAL ☐ ALLEGED

03 AREA POTENTIALLY AFFECTED: unknown (Acres) 04 NARRATIVE DESCRIPTION

Contaminants (lead and chromium) in sludge dumped at the sites could leach into the soil [3,4,5,7].

01 ☒ G. DRINKING WATER CONTAMINATION 02 OBSERVED(DATE: ) ☒ POTENTIAL ☐ ALLEGED03 POPULATION POTENTIALLY AFFECTED: 1-100 04 NARRATIVE DESCRIPTION  
Most area residents are supplied by the Melbourne municipal system (Lake Washington) whose surface water intakes are more than 3 miles from the site [6,8]. A few private shallow drinking water wells near the site could be exposed to potential contaminants from the site [1,3,5].01 H. WORKER EXPOSED/INJURY 02 OBSERVED(DATE: ) ☐ POTENTIAL ☐ ALLEGED

03 WORKERS POTENTIALLY AFFECTED: 04 NARRATIVE DESCRIPTION

None reported. The site is currently inactive [3,14].

01 ☒ I. POPULATION EXPOSURE/INJURY 02 OBSERVED(DATE: ) ☒ POTENTIAL ☐ ALLEGED

03 POPULATION POTENTIALLY AFFECTED: 1-100 04 NARRATIVE DESCRIPTION

Residents with shallow surficial aquifer wells could be exposed to suspected carcinogens (chromium and lead) found in the electroplating sludge [1,3,4,5,7].

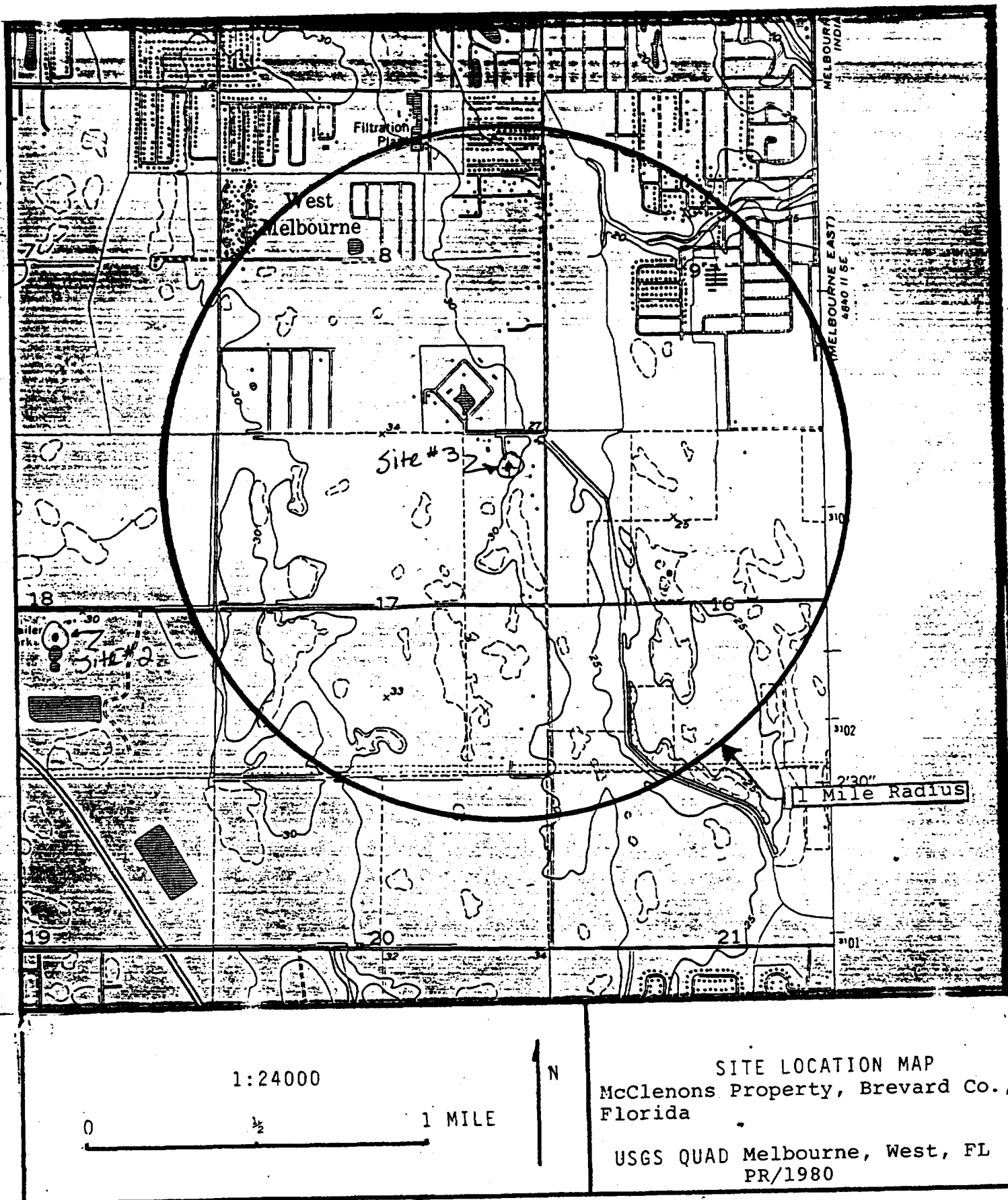


Fig. 1

SITE SCREENING SUMMARY

Site Name: McClenons Property

EPA ID #: FLD980556484

Reviewer Name: Mary L. Lubinski/Jim McCarthy

Date: 9/22/87

I. INITIAL REVIEW: (Check where appropriate) NPL ☐ RCRA ☒ Fed. Fac. ☐ "Low Priority" Landfill ☐

reason: RCRA regulated waste was discharged after Nov. 19, 1980 and there appears to be a financially  
viable responsible party [3,10,11]. NFA ☐

II. LEAD: Fund ☐ Enforcement ☐ Unknown ☐

III. REMOVAL: Needed ☐ reason:

Completed ☐ (score using preremoval conditions)

IV. HRS SCORE: 11.26 Confidence: high ☐ medium ☐ low ☒

V. LOCATION: Latitude: 28° 03' 18" N Longitude: 80° 38' 26" W [3,6]

VI. INFORMATION NEEDED: (Check information needed to determine disposition)

A. Preliminary Assessment (Notes/sources for future reference)

- X 1. RCRA Status Information: Final RCRA determination/USEPA.
2. Observed Release: \_\_\_\_\_
3. Target Information: \_\_\_\_\_
4. Distance to Surface Water: \_\_\_\_\_
5. Depth to aquifer of concern: \_\_\_\_\_
6. Waste identity: \_\_\_\_\_
7. Hazardous waste quantity: \_\_\_\_\_
8. Others (list): \_\_\_\_\_

B. Site Investigation

1. Waste identity: \_\_\_\_\_
2. Distance to surface water: \_\_\_\_\_
3. Slope/intervening terrain: \_\_\_\_\_
4. Containment: \_\_\_\_\_
5. Observed release (surface): \_\_\_\_\_
6. Observed release (ground): \_\_\_\_\_
7. Hazardous waste quantity: \_\_\_\_\_
8. Others (list): \_\_\_\_\_

CRITICAL HRS FACTOR DOCUMENTATION FORM

SITE NAME: McClenons Property

EPA ID #: FLD980556484

REVIEWER: Mary L. Lubinski/Jim McCarthy

DATE: 9/25/87

1. Is an observed release documented (background and site samples are available and the site is shown to be the source of the contamination) or is one likely?

GROUNDWATER: Yes\_\_\_ No X Likely\_\_\_

SURFACE WATER: Yes\_\_\_ No: X Likely\_\_\_

Groundwater info source:

Surface water info source:

2. What is the depth at the site to the shallowest aquifer used locally for drinking water?  
(Floridan aquifer)

Depth: 250 feet.

Known: X Estimated\_\_\_ Unknown\_\_\_

Source: [Ref. 1].

3. What is the distance to surface water from the hazardous waste?

Distance: 100 ft. - 1/4 mile. Known: X Estimated\_\_\_ Unknown\_\_\_

Source: [Fig. 1, Ref. 6].

4. What are the most toxic/persistent chemicals at the site? Unknown\_\_\_

a) lead - T/P = 18

b) chromium - T/P = 18

c) cyanide - T/P = 12

Source: [Ref. 3,4,7,\*].

5. What is the hazardous waste quantity?

Quantity: 1 drum (default)

Known:\_\_\_ Estimated\_\_\_ Unknown X

Source: [Ref. 3].

6. What is the distance to the nearest public water supply well using the aquifer of concern and what is the population served?

Distance: > 3 miles.

Known X Estimated\_\_\_ Unknown\_\_\_

Population: N/A.

Known\_\_\_ Estimated\_\_\_ Unknown\_\_\_

Source: [Ref. 6,8].

7. What is the distance to the nearest private water supply well using the aquifer of concern and what is the population served within 3 miles? (Floridan aquifer)

Distance: 1 mile.

Known\_\_\_ Estimated X Unknown\_\_\_

Population: 178.

Known\_\_\_ Estimated X Unknown\_\_\_

Source: [Ref. 6,9,\*] 47 x 3.8 = 178.

8. What is the distance to the nearest downstream surface water intake and the population served?

Distance: > 3 miles.

Known X Estimated\_\_\_ Unknown\_\_\_

Population: N/A.

Known\_\_\_ Estimated\_\_\_ Unknown\_\_\_

Source: [Ref. 6,8].

\* Data Collection and Documentation Techniques for HRS Scoring of Hazardous Waste Sites. 3/87. NUS.

## HRS SCORE SHEET

DATE: 9/25/87SITE NAME: McClenons PropertyEPA ID #: FLD980556484REVIEWER: Mary L. Lubinski/Jim McCarthy

## HRS FACTOR SCORES

	Score	Default	Known	Est.
1) Toxicity/persistence (TP) [3,4,5,7,*]	<u>8</u>	<u>none</u>	<u>X</u>	
2) Waste quantity (WQ)	<u>1</u>	<u>X(1)</u>		
3) Containment (Groundwater) (C <sub>gw</sub> )	<u>3</u>	<u>X(3)</u>		
4) Depth to aquifer of concern (D <sub>ac</sub> ) [1,2,*]	<u>0</u>	<u>(6)</u>	<u>X</u>	
5) Distance to nearest well/population (DP <sub>g</sub> )	<u>16</u>	<u>none</u>		<u>X</u>
6) Containment (Surface Water) (C <sub>sw</sub> )	<u>3</u>	<u>X(3)</u>		
7) Distance to surface water (D <sub>sw</sub> )	<u>6</u>	<u>(6)</u>	<u>X</u>	
8) Distance to surface intake/population (DP <sub>s</sub> )	<u>0</u>	<u>none</u>	<u>X</u>	

## HRS GROUNDWATER ROUTE SCORING:

a) If observed release:  $S_{gw} = \frac{(TP + WQ)(DP_g + 9)}{12.74} = \underline{\underline{N/A}}$

b) If no observed release:  
 $S_{gw} = \frac{(D_{ac} + 7)(TP + WQ)(DP_g + 9)(C_{gw})}{573.3} = \underline{\underline{17.40}}$

## HRS SURFACE WATER ROUTE SCORING

a) If observed release:  $S_{sw} = \frac{(TP + WQ)(DP_s + 9)}{14.3} = \underline{\underline{N/A}}$

b) If no observed release:  
 $S_{sw} = \frac{(D_{sw} + 5)(TP + WQ)(DP_s + 9)(C_{sw})}{643.5} = \underline{\underline{8.77}}$

## MULTIMEDIA HRS SCORING

Do not score the air route unless an observed release is known to have occurred.

$$S_m = \text{the square root of } \frac{S_{gw}^2 + S_{sw}^2}{1.73} = \underline{\underline{11.26}}$$

The scoring in above steps is based on the following default scores:

- 1) the sum of the scores for net precipitation, permeability, and physical state is 7,
- 2) the groundwater use is for drinking and the score used is 9,
- 3) the sum of the scores for slope/terrain, rainfall and physical state is 5,
- 4) the sum of the scores for surface water use and distance to sensitive environments is 9.

If these assumptions are known to be substantially incorrect, complete an HRS scoring sheet.

## REFERENCES

Reference Number	Description of Reference
1.	Brown, D.W., W.E. Kenner, J.W. Crooks and J.B. Foster. 1962. USGS Water Resources of Brevard Co., Florida. RI No. 28.
2.	Brown, D.W., W.E. Kenner, J.W. Crooks and J.B. Foster. 1962. Water Resources Records of Brevard Co., Florida. IC 32.
3.	Environmental Protection Agency. 6/5/81. Notification of Hazardous Waste Site.
4.	Sax, N. Irving. 1984. Dangerous Properties of Industrial Materials, Sixth Edition. Van Nostrand Reinhold Company.
5.	Environmental Protection Agency. 1979. Development Document for Existing Source Pretreatment Standards for the Electroplating Point Source Category.
6.	Topographic maps. PR/1980. Melbourne West.
7.	Sittig, M. 1976. Toxic Metals - Pollution Control and Worker Protection. Noyes Publications, Park Ridge, N.J.
8.	Healy, H. 1977. Public Water Supplies of Selected Municipalities in Florida, 1975. USGS. WRI 77-53.
9.	Well Data. 9/23/87. Water Well Construction Permit - St. Johns Water Management District.
10.	USEPA. 11/25/86. Site Screening Guidance.
11.	Appendix. Unlisted (Characteristic) Hazardous Wastes (40 CFR Part 261, Subpart C) and Lists of Hazardous Wastes (40 CFR Part 261, Subpart D).
12.	Sittig, M. (ed.). 1985. Handbook of Toxic and Hazardous Chemicals and Carcinogens, 2nd Edition. Noyes Publications, Park Ridge, New Jersey.
13.	McCarthy, J. to E. Nuzie. 9/30/87. RCRA Status Memo.
14.	McGarritty, J. 9/28/87. Windshield Survey.

CONVERSATION RECORD

Reference 17

Date: 12/14/89File Name: Melbourne Sludge SitesTime: 4:20 PMContact Person: Bob RumblePhone No.: (407) 269-8190Subject: Ownership of the sites

Bob Rumble with the Brevard County Property Appraisers office relayed to me the following information concerning owner ship of the sludge sites.

Mosier's Property is 60.97 Acres registered under the name of Pine Lakes Mobile Home Estates Inc. at the address of 2505 Eber Blvd. An R.P. Mosier is listed at that address in the Melbourne phone book. Bob described the property as: The northern border is Eber Rd. The southern border runs east-west and is 200 feet north of the barrow pit. The SE corner is 300 feet east of the NE corner of the pit. The SW corner is 950 feet west of the NW corner of the pit.

Most of the Evan's Property site is covered by the Melbourne Square Mall with is owned by the DeBartelo Corp. of Youngstown, Ohio under the name - Melbourne-JCP Associates , 7620 Market St. Youngstown, Ohio 44512. Evans-Butler Realty Co., 1333 Gateway Dr. (727-1000) is advertising to sell a portion of undeveloped land east of Evan's Rd. The mall property covers 50.97 Acres.

The McClenon's Property is owned by Helen McClenon of 3075 Florida Ave., Melbourne 32904, and consists of lots 30 and 31 of the Indian River Land Co. Land, also described as the west  $\frac{1}{2}$  of the NE of the NE of Sc. 17, and the east  $\frac{1}{2}$  of the NW of the NE of Sc. 17.

Reproductions of Tax maps can be had by request of the Brevard County Appraiser's Office. The cost is \$3 per section.

*Byron Moore*



CONVERSATION RECORD

Reference 18 -

Date: 12/14/88  
Time: 3pm

File Name: Master's Property  
Contact Person: Lee Miller  
Phone No.: (Sun) 325-1011  
Subject: Sludge Analyses

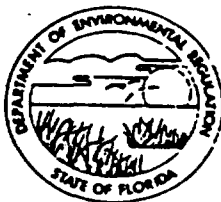
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Mr Miller with FLDER Orlando found no information the the files for Melbourne's D.B. Lee or Grant St. WWT Plants. "Bill Bostwick may remember something which occurred during that time"

Greg Noble with BIS Tallahassee found nothing in the GMS Data Bank under Sludge Generation or Disposal for the two plants.

*Brion Moore*

3319 MAGUIRE BOULEVARD  
SUITE 232  
ORLANDO, FLORIDA 32803



BOB GRAHAM  
GOVERNOR  
Victoria J. Tschinkel  
SECRETARY

ALEX SENKEVICH  
DISTRICT MANAGER

## STATE OF FLORIDA

## DEPARTMENT OF ENVIRONMENTAL REGULATION

## ST. JOHNS RIVER DISTRICT

## RECONNAISSANCE INSPECTION REPORT

Source Name: Advanced Board Circuitries, Inc. (FLD-065912966)

Source Location: 600 C North John Rodes Boulevard W. Melbourne, FL

Person Contacted: Walter Wall Title: Engineering Manager

Purpose of Inspection: To determine the status of the above-mentioned site in regard to the current hazardous waste regulations.

Comments: On December 11, 1981, at approximately 1:40 P.M., the above-mentioned site was inspected by the writer. Mr. Walter Wall, Engineering Manager, ABC and Mr. David Hamel, Safety Director, Documation, Inc., accompanied me during my inspection of the facility. ABC employs approximately 243 employees in the production of Printed Circuit Boards.

Waste generated as a result of production includes the following:

## A. Spent electroplating solutions

- |                             |               |
|-----------------------------|---------------|
| 1) Copper solution          | Drum disposal |
| 2) Tin solution             | Drum disposal |
| 3) Spent Palladium catalyst | Drum-reclaim  |
| 4) Gold solution            | Reclaimed     |

## B. Spent solvents

- |                      |                        |
|----------------------|------------------------|
| 1) Trichloroethylene | Drum Disposal/reclaim. |
|----------------------|------------------------|

## C. Photochemical solutions

- |               |                |
|---------------|----------------|
| 1) Fixers     | Sanitary sewer |
| 2) Developers | Sanitary sewer |

## D. Spent cleanfluids from silkscreening

- |                       |                |
|-----------------------|----------------|
| 1) TRS cleaning fluid | Sanitary sewer |
|-----------------------|----------------|

- |                               |               |                 |
|-------------------------------|---------------|-----------------|
| E. Electroplating rinsewaters | pH adjustment | sanitary sewers |
| Cu - five ppm 5.0             |               |                 |
| Pb - two ppm 2.0              |               |                 |

Indicate Corrective Action(s) to be Undertaken by DER District Office: contact receiving POTW regarding metals in discharge to sewer system.

Individual Assigned Responsibility for Corrective Action(s): Clifford Miller Title: ES II

## PRINTED CIRCUIT BOARD PRODUCTION

### I. Design

The board is designed according to the desired electronic configuration. The design is produced and photographically reproduced on to the board.

### II. Drilling

The board has drill holes drilled automatically according to the desired design.

### III. Electroplating

The electroplating and filming process is illustrated on the following pages. Rinsewater waste is pH adjusted before entering the sanitary sewer. According to Mr. Wall, three hundred (300) gallons per minute of wastewater is discharged into the sanitary sewer. This wastewater contains five (5.0) ppm (Cu) Copper and two (2.0) ppm (Pb) Lead. Spent electroplating solutions are drummed in (55) fifty-five gallon drums for disposal in Michigan by Chemcon Corporation of Zellwood, FL. Approximately 80 drums of waste are generated per month. Gold and other precious metals are reclaimed.

### IV. Silk Screening

*N* The plant operates a small silk screening process. Silk screens are cleaned with TRS cleaning fluid which is discharged to the sanitary sewer.

## Waste Management

- I. Hazardous wastes appeared to be managed properly and in compliance with the hazardous waste regulations. There is concern regarding the metals being discharged into the sanitary sewer. This facility plans to begin treatment for metals in July, 1982. At that time, they will be a TSD (treatment) facility. In the interim, close attention should be given to their wastewater.

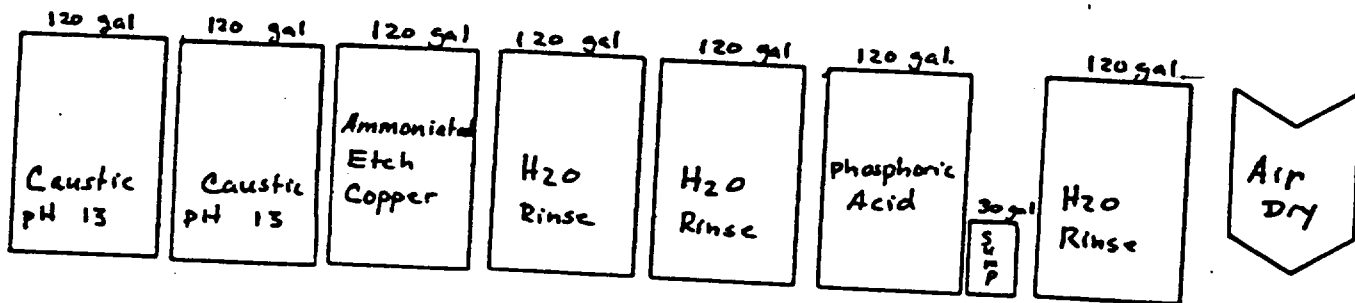
At the time of my inspection, the following hazardous wastes were on-site:

Spent electroplating solution - 56 fifty-five gallon drums.

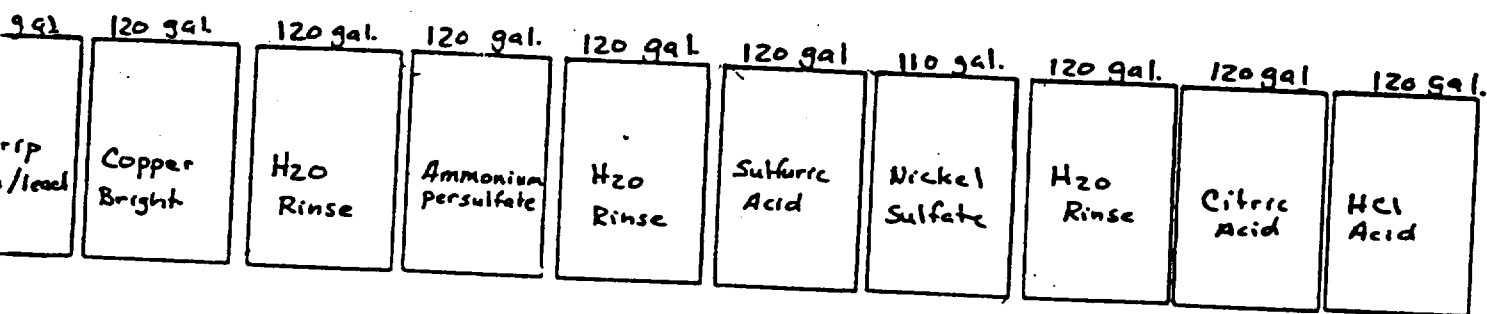
Spent Tin/Lead electroplating solution - 12 fifty-five gallon drums.

Spent degreasing solvents - 14 fifty-five gallon drums.

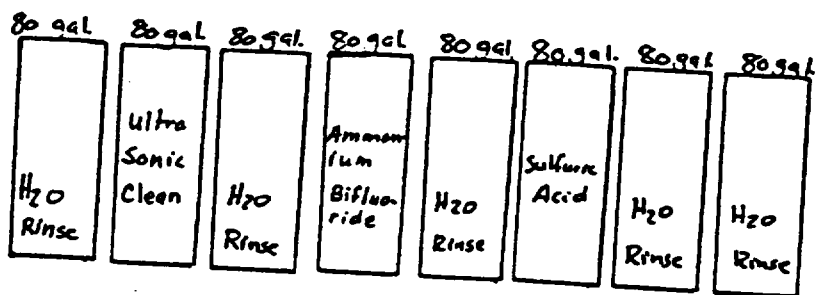
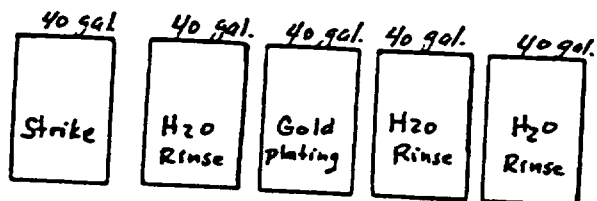
Electroplating processes - See following page.

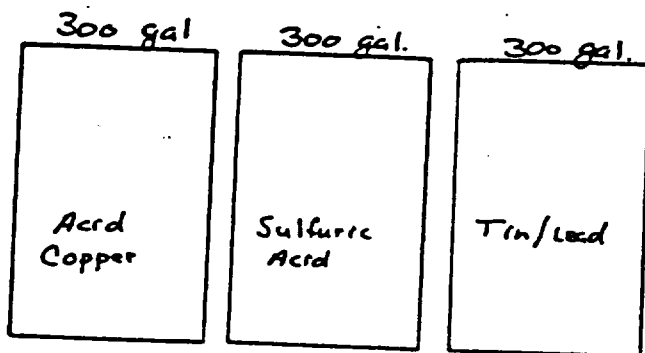
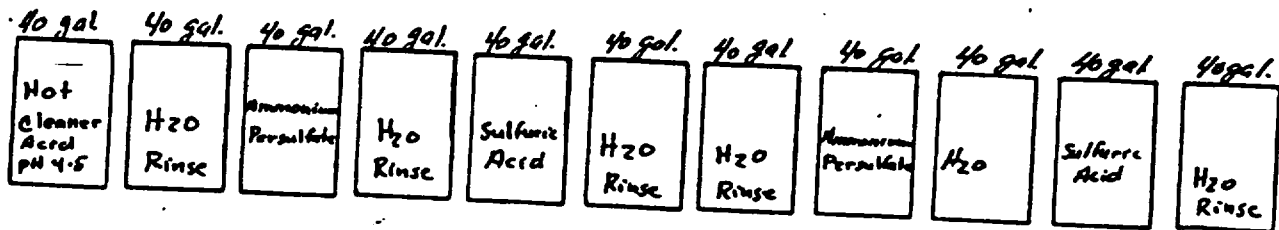


### Nickel Electroplating

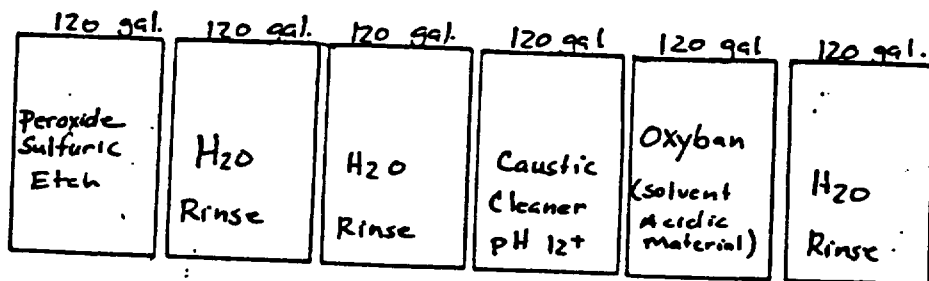
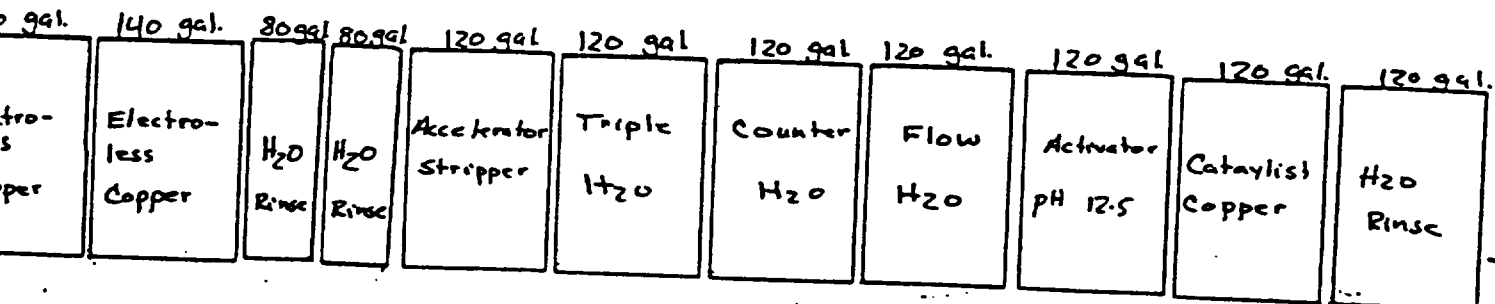


### Gold Electroplating

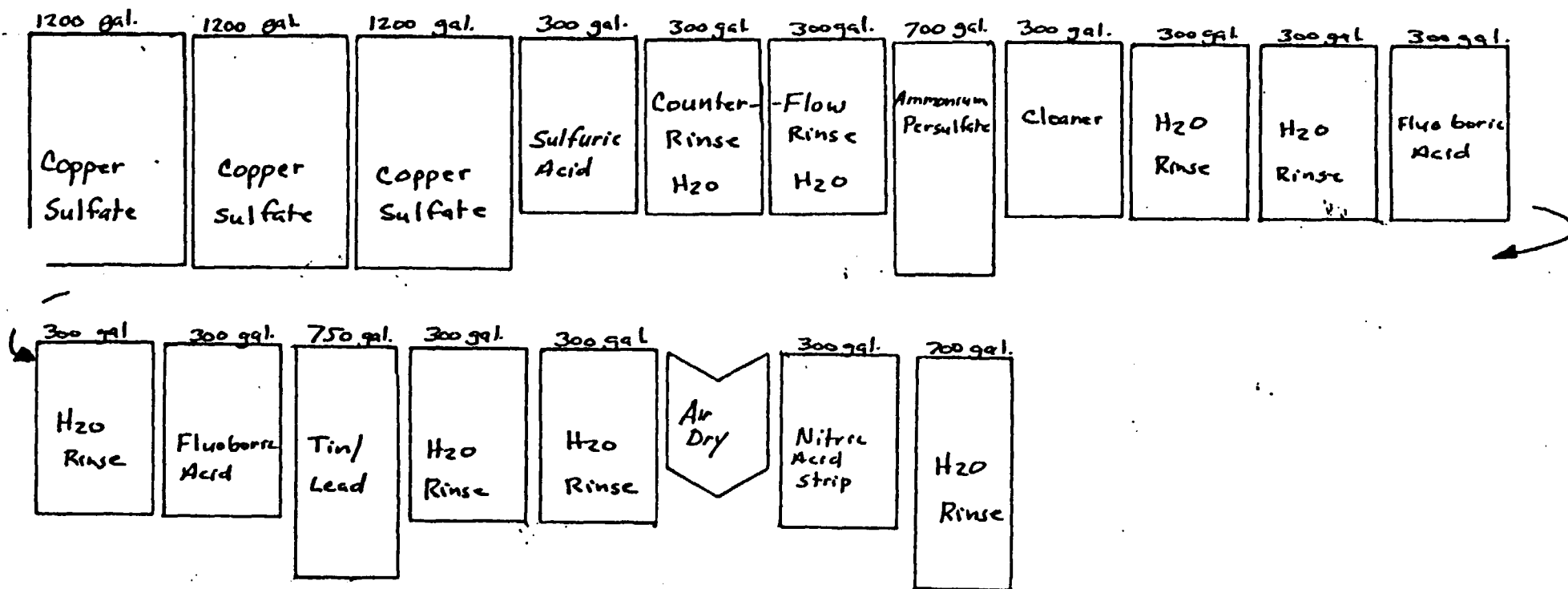




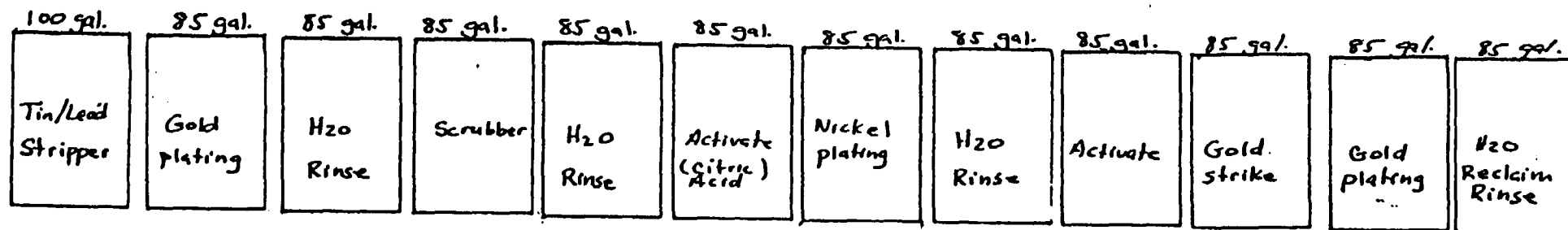
Automatic Electroless Copper Tin/Lead Plating



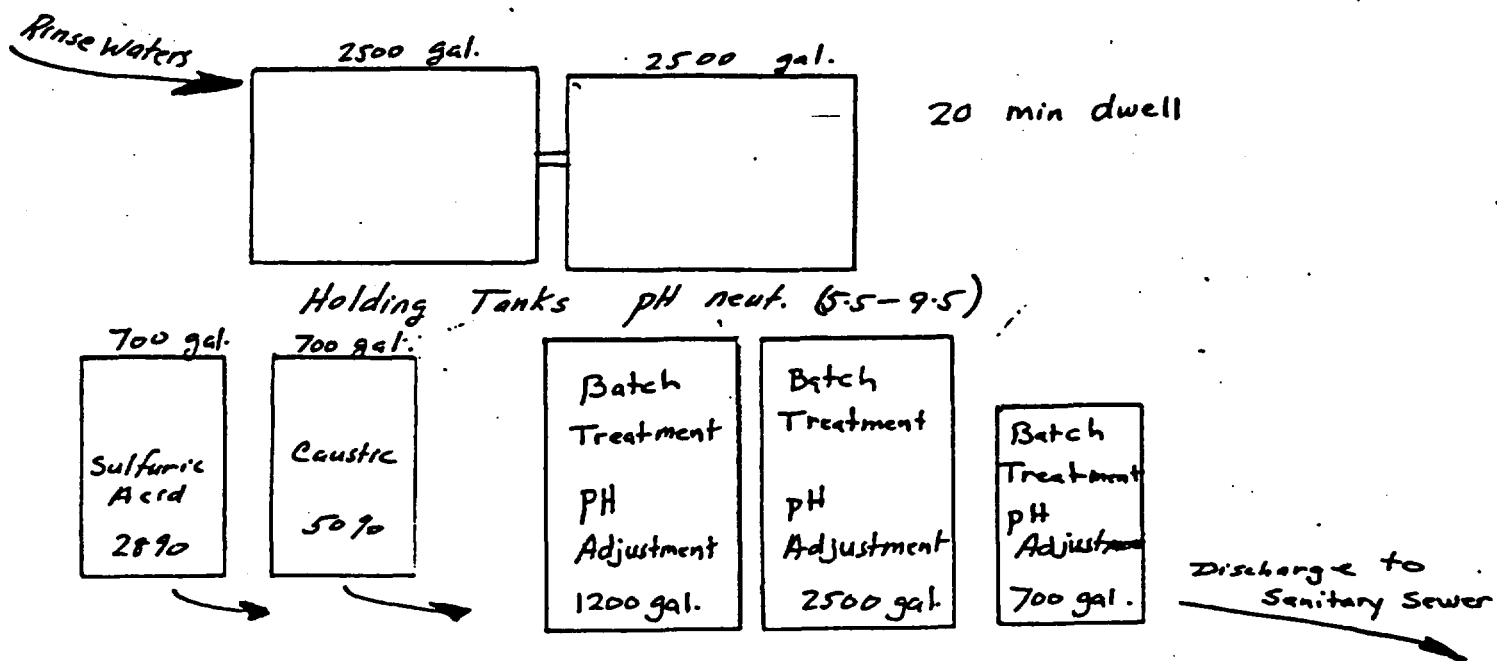
## Automatic Plating Copper Tin/Lead



## Automatic Plating Gold



# Rinsewater Batch Treatment system - pH Adjustment



FORM GENERAL		ENVIRONMENTAL PROTECTION AGENCY <b>GENERAL INFORMATION</b> Consolidated Permits Program Read the "General Instructions" before starting.	I. EPA I.D. NUMBER FLD 065912966
EPA I.D. NUMBER FACILITY NAME FACILITY MAILING ADDRESS FACILITY LOCATION		000132 PLEASE PLACE LABEL IN THIS SPACE EPA REGION IV NOV 19 5 11 PM '76	
<b>GENERAL INSTRUCTIONS</b> If a preprinted label has been provided, affix it in the designated space. Review the information carefully; if any of it is incorrect, cross through it and enter the correct data in the appropriate fill-in area below. Also, if any of the preprinted data is absent (the area to the left of the label space lists the information that should appear), please provide it in the proper fill-in area(s) below. If the label is complete and correct, you need not complete items I, III, V, and VI (except VI-B which must be completed regardless). Complete all items if no label has been provided. Refer to the instructions for detailed item descriptions and for the legal authorizations under which this data is collected.			

**POLLUTANT CHARACTERISTICS**

**INSTRUCTIONS:** Complete A through J to determine whether you need to submit any permit application forms to the EPA. If you answer "yes" to any questions, you must submit this form and the supplemental form listed in the parenthesis following the question. Mark "X" in the box in the third column the supplemental form is attached. If you answer "no" to each question, you need not submit any of these forms. You may answer "no" if your activity excluded from permit requirements; see Section C of the instructions. See also, Section D of the instructions for definitions of bold-faced terms.

SPECIFIC QUESTIONS	MARK 'X'			SPECIFIC QUESTIONS	MARK 'X'		
	YES	NO	FORM ATTACHED		YES	NO	FORM ATTACHED
A. Is this facility a publicly owned treatment works which results in a discharge to waters of the U.S.? (FORM 2A)		X		B. Does or will this facility (either existing or proposed) include a concentrated animal feeding operation or aquatic animal production facility which results in a discharge to waters of the U.S.? (FORM 2B)		X	
C. Is this a facility which currently results in discharges to waters of the U.S. other than those described in A or B above? (FORM 2C)	X			D. Is this a proposed facility (other than those described in A or B above) which will result in a discharge to waters of the U.S.? (FORM 2D)		X	
E. Does or will this facility treat, store, or dispose of hazardous wastes? (FORM 3)	X			F. Do you or will you inject at this facility industrial or municipal effluent below the lowermost stratum containing, within one quarter mile of the well bore, underground sources of drinking water? (FORM 4)		X	
G. Do you or will you inject at this facility any produced water or other fluids which are brought to the surface in connection with conventional oil or natural gas production, inject fluids used for enhanced recovery of oil or natural gas, or inject fluids for storage of liquid hydrocarbons? (FORM 4)		X		H. Do you or will you inject at this facility fluids for special processes such as mining of sulfur by the Frasch process, solution mining of minerals, in situ combustion of fossil fuel, or recovery of geothermal energy? (FORM 4)		X	
I. Is this facility a proposed stationary source which is one of the 28 industrial categories listed in the instructions and which will potentially emit 100 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X		J. Is this facility a proposed stationary source which is NOT one of the 28 industrial categories listed in the instructions and which will potentially emit 250 tons per year of any air pollutant regulated under the Clean Air Act and may affect or be located in an attainment area? (FORM 5)		X	

**NAME OF FACILITY**

ADVANCED BOARD CIRCUITRIES

**FACILITY CONTACT**

A. NAME & TITLE (last, first, & title)	B. PHONE (area code & no.)
WALL, WALTER PROCESS ENGINEER	305 254-7320

**FACILITY MAILING ADDRESS**

A. STREET OR P.O. BOX			
600 C North John Rodes Blvd.			
B. CITY OR TOWN		C. STATE	D. ZIP CODE
Melbourne,		FL	32935

**FACILITY LOCATION**

A. STREET, ROUTE NO. OR OTHER SPECIFIC IDENTIFIER			
600 C North John Rodes Blvd.			
B. COUNTY NAME		C. STATE	E. ZIP CODE
Brevard		FL	32935
C. CITY OR TOWN		F. COUNTY CODE (if known)	
Melbourne,			





HAZARDOUS WASTE PERMIT APPLICATION  
Consolidated Permits Program  
(This information is required under Section 3005 of RCRA.)

I. EPA I.D. NUMBER

FLD 0659 1296 631

OFFICIAL USE ONLY

DATE RECEIVED	(yr. mo. & day)	
23	24	25

COMMENTS

FIRST OR REVISED APPLICATION

Place an "X" in the appropriate box in A or B below (mark one box only) to indicate whether this is the first application you are submitting for your facility or a revised application. If this is your first application and you already know your facility's EPA I.D. Number, or if this is a revised application, enter your facility's I.D. Number in Item I above.

FIRST APPLICATION (place an "X" below and provide the appropriate date)

☒ 1. EXISTING FACILITY (See instructions for definition of "existing" facility. Complete item below.)

YR.	MO.	DAY
74	8	61

FOR EXISTING FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR THE DATE CONSTRUCTION COMMENCED (use the boxes to the left)

☐ 2. NEW FACILITY (Complete item below.)

YR.	MO.	DAY
73	74	75

FOR NEW FACILITIES, PROVIDE THE DATE (yr., mo., & day) OPERATION BEGAN OR IS EXPECTED TO BEGIN

REVISED APPLICATION (place an "X" below and complete item I above)

☐ 1. FACILITY HAS INTERIM STATUS

☐ 2. FACILITY HAS A RCRA PERMIT

PROCESSES - CODES AND DESIGN CAPACITIES

PROCESS CODE - Enter the code from the list of process codes below that best describes each process to be used at the facility. Ten lines are provided for entering codes. If more lines are needed, enter the code(s) in the space provided. If a process will be used that is not included in the list of codes below, then describe the process (including its design capacity) in the space provided on the form (Item III-C).

PROCESS DESIGN CAPACITY - For each code entered in column A enter the capacity of the process.

AMOUNT - Enter the amount.

UNIT OF MEASURE - For each amount entered in column B(1), enter the code from the list of unit measure codes below that describes the unit of measure used. Only the units of measure that are listed below should be used.

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
Storage:		
CONTAINERS (barrel, drum, etc.)	501	GALLONS OR LITERS
WASTE PILE	502	GALLONS OR LITERS
	503	CUBIC YARDS OR CUBIC METERS
SURFACE IMPOUNDMENT	504	GALLONS OR LITERS
DESIGN		
INJECTION WELL	505	GALLONS OR LITERS
NOFIED	506	ACRE-Feet (the volume that would cover one acre to a depth of one foot) OR HECTARE-METER
NO APPLICATION FOR EARTH DISPOSAL	507	ACRES OR HECTARES
SURFACE IMPOUNDMENT	508	GALLONS PER DAY OR LITERS PER DAY
	509	GALLONS OR LITERS

Treatment:

PROCESS	PROCESS CODE	APPROPRIATE UNITS OF MEASURE FOR PROCESS DESIGN CAPACITY
TANK	T01	GALLONS PER DAY OR LITERS PER DAY
SURFACE IMPOUNDMENT	T02	GALLONS PER DAY OR LITERS PER DAY
INCINERATOR	T03	TONS PER HOUR OR METRIC TONS PER HOUR OR GALLONS PER HOUR OR LITERS PER HOUR
OTHER (Use for physical, chemical, thermal or biological treatment processes not occurring in tanks, surface impoundments or incinerators. Describe the processes in the space provided; Item III-C.)	T04	GALLONS PER DAY OR LITERS PER DAY

UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE	UNIT OF MEASURE	UNIT OF MEASURE CODE
GALLONS	G	LITERS PER DAY	V	ACRE-Feet	A
YARDS	L	TONS PER HOUR	D	HECTARE-METER	F
CUBIC YARDS	Y	METRIC TONS PER HOUR	W	ACRES	B
CUBIC METERS	C	GALLONS PER HOUR	E	HECTARES	Q
LITERS PER DAY	U	LITERS PER HOUR	H		

EXAMPLE FOR COMPLETING ITEM III (shown in line numbers X-1 and X-2 below): A facility has two storage tanks, one tank can hold 200 gallons and the other can hold 400 gallons. The facility also has an incinerator that can burn up to 20 gallons per hour.

DUP

T/A/C
1

A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY	LINE NUMBER	A. PROCESS CODE (from list above)	B. PROCESS DESIGN CAPACITY		FOR OFFICIAL USE ONLY
	1. AMOUNT (specify)	2. UNIT OF MEASURE (enter code)				1. AMOUNT	2. UNIT OF MEASURE (enter code)	
502	600	G		5	T01	20,000	U	
503	20	F		6				
501	1000	G		7	T01	60,000	U	
502	2500	G		8				
501	20,000	G		9				
501	20,000	G		10				

**FOR OFFICIAL USE ONLY**

**I.D. NUMBER** (enter from page 1)

L	D	0	6	5	9	1	2	9	6
---	---	---	---	---	---	---	---	---	---

17

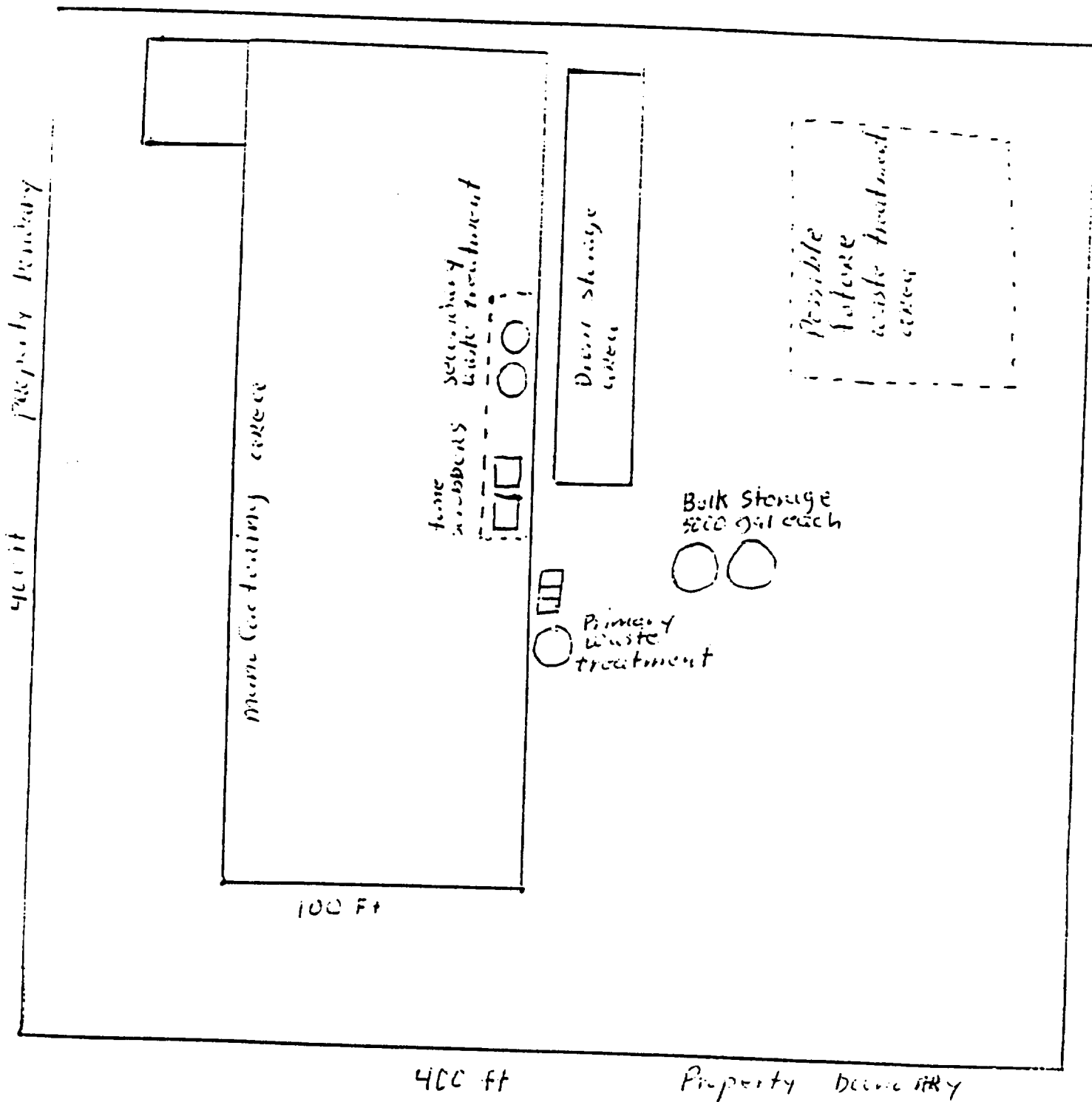
D U P

D U P

## DESCRIPTION OF HAZARDOUS WASTES (continued)

[illegible]

Howeview Deane Circumstances  
Melbourne, Fla

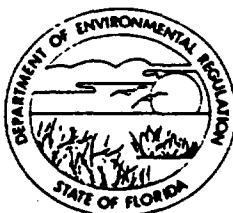


STATE OF FLORIDA

DEPARTMENT OF ENVIRONMENTAL REGULATION

ST. JOHNS RIVER DISTRICT

3319 MAGUIRE BOULEVARD  
SUITE 232  
ORLANDO, FLORIDA 32803-3767



BOB GRAHAM  
GOVERNOR

VICTORIA J. TSCHINKEL  
SECRETARY

A. ALEXANDER, P.E.  
ALEXANDER KEVICH  
DISTRICT MANAGER

April 4, 1984

Mr. Sam Farless, General Manager  
Far Mac Plating, Inc.  
1015 South Eddie Allen Road  
Melbourne, Florida 32901

OSJ-HW-84-0087

RECEIVED

APR 11 '84

Dear Mr. Farless:

Brevard County - HW  
Far Mac Plating, Inc.  
FLD 064 816 424

Hazardous Waste

An inspection on March 28, 1984 was made to determine whether your facility is in compliance with rules of the State of Florida, Chapter 17-30, Part III, Standards for Generators and Transporters of Hazardous Waste and Owners and Operators of Hazardous Waste Facilities. The attached report, RCRA Compliance Inspection Report, indicates that at this time the hazardous waste classification of your facility is a small-quantity generator and is in compliance.

If you have any questions, please contact the inspector, Mr. James B. Lee at (305) 894-7555.

Sincerely,

*A. T. Sawicki*

A. T. Sawicki, P.E.  
Hazardous/Solid Waste  
Engineering

*cm*  
ATS:jblc

Enclosure

✓ cc: C. Diltz, DER-Tallahassee

Mr. Sam Farless  
OSJ-HW-84-0087  
April 4, 1984  
Page Two

20  
Brevard County - HW  
Far Mac Plating, Inc.  
FLD 064 816 424

### NARRATIVE

On March 28, 1984, Messrs. James B. Lee and Jon Lucas, accompanied by Mr. Sam Farless of Far Mac Plating, Inc., inspected the facility for compliance with hazardous waste standards.

The Melbourne facility reconditions vehicle bumpers by straightening, stripping and polishing operation which generates copper cyanide, chrome and nickel waste that is recycled (see sketch).

The strip room, which prepares the chrome and nickel parts to be processed, has two 1,000-gallon muratic acid solution tanks, a 950-gallon flowing rinse tank, and a 950-gallon spray rinse tank. The excess neutralized rinse water is discharged to the Melbourne-Grant Street Waste Water Treatment Plant. Tests are run periodically to ensure rinse waste water meets standards.

Since the last inspection of July 1, 1983, Far Mac Plating has modified its operation by replacing the continual flow chrome rinse step with a spray rinse step which reduces the amount of rinse water used. The rinse water is periodically returned to plating solution tank when the level is low. De-ionized water is added to the rinse tank. Twice a week, after the chrome plating process has gone through the rinse cycles, the chrome rinse water is directed into a 8' x 2.5' x 4' evaporation tank (80 cubic feet or 598 gallons). The remaining chrome concentrate from the boil down is returned back and reused in the chrome plating bath.

An aluminum caustic strip tank (200 gallons) has been added to prepare aluminum parts for anodizing. A 2% - 4% caustic soda solution is used for the anodizing operation conducted by Russell Brothers, Inc. located in Sanford, Florida. Periodically caustic soda is added to the tank. No waste is generated from this operation.

The de-ionized spray rinse water in the nickel process is placed in a catch tank and evaporated down. The remaining water and nickel concentrate is placed in the 1,000-gallon nickel plating solution for re-use. The rinse water is neutralized and discharged to the Melbourne-Grant Street Waste Water Treatment Plant.

Mr. Sam Farless  
OSJ-HW-84-0087  
April 4, 1984  
Page Three

Mr. Farless stated that the chrome evaporation process is being replaced within the next six months with an anion-cation exchange unit. This system is already in use at a Miami facility. The procedure will separate chrome and water into two separate products, thus recapturing the chrome and recycling it back into the plating bath.

Two 55-gallon containers of waste oil have been accumulated within the past several years. Mr. Farless was given a list of transporters to have these drums removed and properly disposed. No other waste is generated at the facility.

Far Mac Plating, Inc. is considered a small-quantity generator of hazardous waste. At the time of inspection, Far Mac Plating is in compliance with hazardous waste standards as per Chapter 17-30, Florida Administrative Code.

ATS:jblc

### Aquifer Recharge

An aquifer is a saturated geologic formation that can transmit significant quantities of water under ordinary hydraulic gradients (Freeze and Cherry, 1979). Within Brevard County there are two significant aquifers - the Floridan aquifer system and the surficial aquifer system.

The Floridan aquifer system is a thick carbonate rock (predominantly limestone) which includes all or part of the Paleocene to early Miocene Series, and contains water under confined conditions. In Brevard County, the chloride concentrations within most of the Floridan aquifer system is greater than 250 milligrams per liter (mg/l), which is a potable (drinking) water standard. In portions of the County, the chloride concentrations are greater than 1000 mg/l (Map 13). The source of the highly mineralized water in the Floridan aquifer system is the result of saltwater contamination which occurred primarily during past geologic periods.

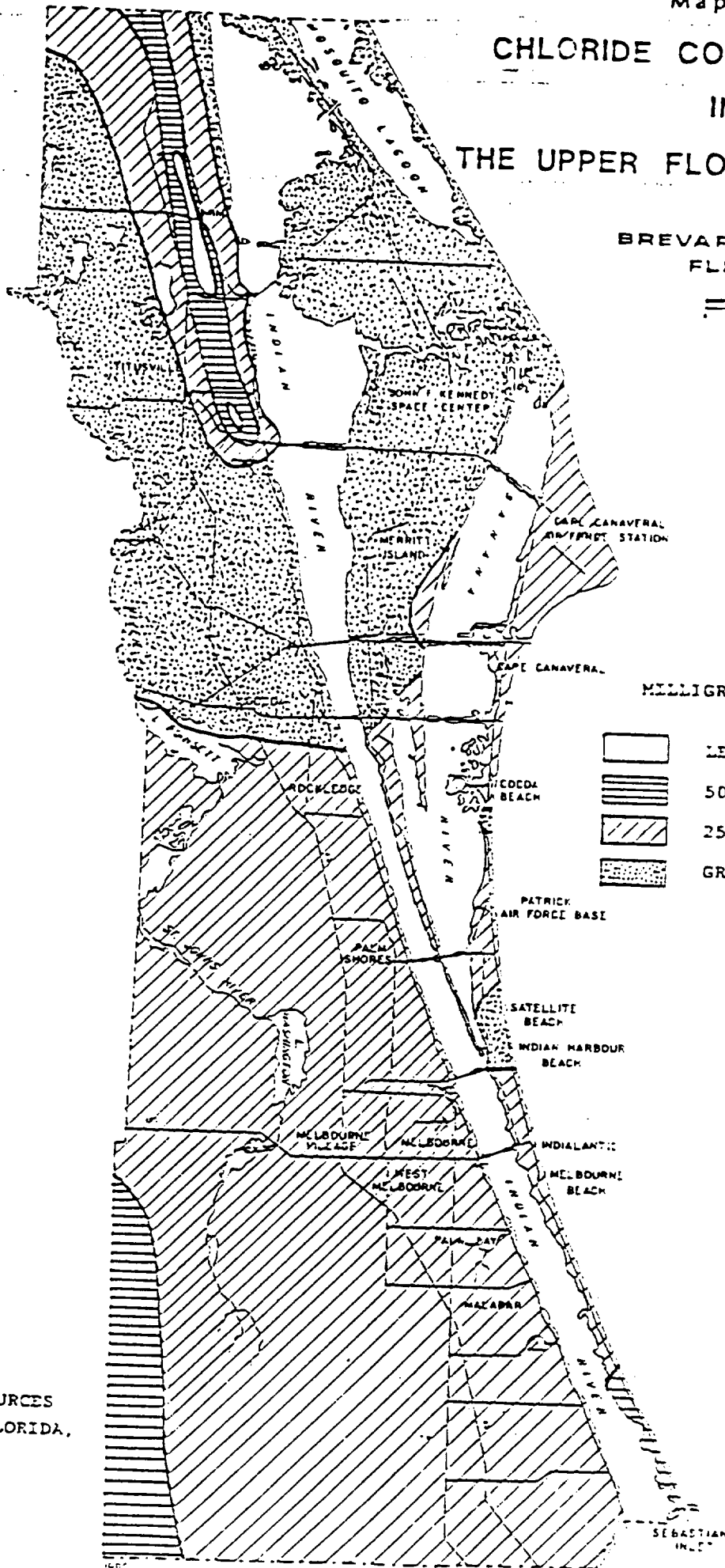
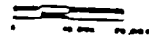
The surficial aquifer system is the permeable hydrogeologic unit contiguous with land surface that is comprised principally of unconsolidated sediments. It also includes carbonate rocks other than those of the Floridan aquifer system, such as coquina rock deposits. Sediment and rock deposits making up the surficial aquifer system belong to all or part of the Upper Miocene to Holocene Series. It contains the water table and water within it is under mainly unconfined conditions; but beds of low permeability may cause semiconfined conditions in its deeper parts. This aquifer serves as the municipal supply for the cities of Palm Bay, Mims and Titusville, and for many other public and private potable water supplies. The surficial aquifer system is also utilized for irrigation of lawns.

Ground water recharge is the hydrogeologic process by which aquifers are replenished. Water infiltrates the land surface and eventually flows into the ground water aquifer. A recharge area is the unit of land surface in which infiltration occurs. A recharge area is not always directly above the aquifer it is recharging, but may be some distance away (St. Johns River Water Management District, October 1986). Recharge characteristics of an area are dependent upon several natural features including elevation, slope, compaction of the soils and type of soils.

The St. Johns River Water Management District has designated prime ground water recharge areas for the Floridan aquifer system. There are no such areas designated within Brevard County. However, the County has designated recharge areas for the surficial aquifer system which serves as a water source for the cities of Mims, Titusville, and Palm Bay as well as for other public water supplies and individual wells.

# CHLORIDE CONCENTRATION IN THE UPPER FLORIDAN AQUIFER

BREVARD COUNTY  
FLORIDA



MILLIGRAMS PER LITER

	LESS THAN 50
	50 - 250
	250 - 1000
	GREATER THAN 1000

SOURCE:  
WATER RESOURCES  
ATLAS OF FLORIDA,  
1984





State of Florida  
DEPARTMENT OF ENVIRONMENTAL REGULATION

For Routing To Other Than The Addressee	
To: _____	Location: _____
To: _____	Location: _____
To: _____	Location: _____
From: _____	Date: _____

# Interoffice Memorandum

TO: Eric S. Nuzie, Technical Review Section, BWC

FROM: Brian M. Moore, Technical Review Section, BWC *BMM*

DATE: January 5, 1988.

SUBJECT: Potable wells within 3 miles of the Melbourne sludge sites.

Attached are reference materials which show location, depths, and population served for wells within 3 miles of the Melbourne sludge sites.

Private wells estimates are based on 1- service area maps and well inventory data sent by Bud Timmons (see attached) and 2- house counts were made in areas not served by public systems. Use of the shallow aquifer as the primary source for drinking was confirmed by Bud Timmons, Dr. David Toth, and driller Adger Smith (see attached). Very few people in this area drink Floridan water due to high salinity.

Closest wells were determined by conversation with Bud Timmons (see attached).

CONVERSATION RECORD

Date: 12/22/88

File Name: Melbourne Sludge Sites

Time: 2:30 PM

Contact Person: Bud Timmons

Phone No.: (Suncom 367-1515)

By: Brian M. Moore

Subject: Closest wells

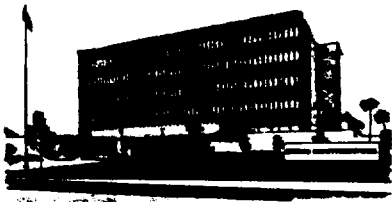
Bud Timmons relayed the following information to me regarding closest wells which he found in his USGS well inventory file.

The closest well, within 2 miles of sites 1,5,6,7 & 8 is a 68 foot deep, 1½" domestic and irrigation well owned by Bertha West located at 719 Nevada St., Melbourne 32904. USGS # - 2803 8040 .003. Case depth is 64 feet. The well is section 12 near Minton's Corner.

Bud Timmons stated and the Melbourne Water Billing Dept. confirmed that the new development on Willowood Dr. adjacent to Mosier's Property is not connected to city water. Recently drilled potable wells in this area are assumed to be in the shallow aquifer.

Bud Timmons also stated that within the degree/minute - 2808 8041 there are 100 wells, 48 of which are shallow, of which 42 are domestic. In the degree/minute 2809 8041 there are 143 wells, of which 56 are shallow, of which 49 are domestic.

Note: The maps sent by Bud Timmons were used to make the map - Reference 6.



**BREVARD** *County*  
BOARD OF COUNTY COMMISSIONERS



OFFICE OF NATURAL RESOURCES MANAGEMENT, 2575 North Courtenay Parkway, Merritt Island, Florida 32953  
Telephone: (407) 453-9515 Sun Com: 367-1515

September 28, 1988

Brian Moore  
CERCLA Site Screening  
Dept. of Env. Regulation  
2600 Blair Stone Road  
Tallahassee, FL 32399-2400

Dear Brian:

Enclosed are public water supply maps and well inventory data for the Melbourne area in the vicinity of the 8 Preliminary Assessment Sites. Additional data is available on the geology, ambient ground water quality, and location. If you have any questions or if we can be of further assistance, please call me or Doug Divers, Environmental Resource Technician at Sun Com 367-1515.

Sincerely,

OFFICE OF NATURAL RESOURCES MANAGEMENT

*Bud Timmons*

Wilson R. Timmons  
Environmental Analysis  
Section Supervisor

WRT/cb

Enclosures

**RECEIVED**  
OCT 3 1988

**BUREAU OF WASTE CLEANUP**  
**Twin Towers**

CHARLES J. ROBERTS District 1	ROGER W. DOBSON District 2 Vice-Chairman	ANDREA DERATANY District 3	SUE SCHMITT District 4 Chairman	THAD ALTMAN District 5	W. E. CURPHEY County Attorney	R. C. WINSTEAD, JR. Clerk
----------------------------------	--	-------------------------------	---------------------------------------	---------------------------	----------------------------------	------------------------------

TOM N. JENKINS, County Administrator

CONVERSATION RECORD

Date: 12/21/88

File Name: Mosiack Property

Time: 4 pm

Contact Person: Adger Smith

Phone No.: (907) 254-2446  
*of Smith's Well Drilling*

Subject: Potable Private Wells

Mr Adger Smith who has been drilling wells in the area for about 50 years stated that in the areas between Melbourne & Palm Bay which are not served by Municipal water approximately 97% of the households would be drinking from shallow wells. The Average depth being 60 to 70 feet to the screen and the water quality is good.

Many of these houses might also have an Artesian well for irrigation.

*Brian Moore*

TECHNICAL PUBLICATION SJ 88-1

SALT WATER INTRUSION IN COSTAL  
AREAS OF VOLUSIA, BREVARD, AND  
INDIAN RIVER COUNTIES

By

David J. Toth, Ph.D

St. Johns River Water Management District  
Palatka, FL

January, 1988

## Brevard County

In Brevard County ground water is withdrawn from the Floridan, intermediate, and surficial aquifer systems. In the northern part of the county, wells penetrating the Floridan and surficial aquifer systems provide water for public and domestic supply. Along the Atlantic Coastal Ridge, surficial aquifer wells also supply water for heat-pump/air conditioning and lawn irrigation. In the central part of the county surficial aquifer wells are primarily used for domestic water supply. In this part of the county the number of wells that tap the Floridan aquifer increases to the east and south. The majority of withdrawals are for irrigation and heat pump use. In south Brevard County, wells penetrating the surficial, intermediate, and Floridan aquifer systems primarily withdraw water for heat pump/air conditioning and irrigation. The concentration of shallow wells exceeds 1,000 per square mile in central Melbourne. The concentration of wells penetrating the Floridan aquifer approaches this amount along the barrier islands. In southeast Brevard County the surficial aquifer also provides water for both public and domestic supply.

In 1983 a total of 205.5 MGD and 39.8 MGD was withdrawn from ground and surface water sources respectively (Marella, 1984, Revised 1986). Ground water use was primarily for agricultural irrigation (52.1%) and heat pump/air conditioning (30.6%, Figure 9). Ground water withdrawals for public supply were minimal because the City of Cocoa obtained its water from well fields in east Orange County and the City of Melbourne obtained its water from Lake Washington. Thirty percent of all surface water

## SURFICIAL AQUIFER SYSTEM

The surficial aquifer system consists of materials younger than upper Miocene Age and includes well-indurated carbonate rocks, other than those of the Floridan aquifer system, that are at or near land surface. It includes the water table, shallow clastic, and shallow rock aquifers. These exist under unconfined conditions where clays and beds of low permeability are absent. In the system's deeper parts, semi-confined or confined conditions may prevail. The top of the laterally extensive and vertically persistent beds of much lower permeability in the Hawthorn Formation denote its base.

### Shallow Rock Aquifer

The shallow rock zone overlies the Hawthorn Formation in Brevard and Indian River counties and is equivalent to the Tamiami Limestone of Pliocene Age. It is defined on drillers' logs and from geophysical interpretations as a water bearing hard limestone. Many municipalities such as Port Malabar, Malabar Woods, Sebastian Highlands, Bent Pines, Vero Beach, and Vero Beach Highlands withdraw water from the shallow rock zone for water supply.

Figure 19 shows the depth to the top of and areal extent of the shallow rock zone. <sup>Tamiami</sup> The top of the shallow rock increases from 50 feet below mean sea level in the north and west to 100 feet below sea level at the coast near Satellite and Wabasso Beach.

# HAZARD RANKING SYSTEM

## DATA COLLECTION AND DOCUMENTATION TECHNIQUES FOR HRS SCORING OF HAZARDOUS WASTE SITES

MARCH, 1987

Prepared By  
NUS Corporation  
Superfund Division

In Cooperation With  
U.S. Environmental Protection Agency  
Investigations and Compliance Unit  
Region IV



## Region IV Preremedial Program Guidance

### Background

The Superfund Amendments and Reauthorization Act of 1986 (SARA) has required EPA to revise the Hazard Ranking System (HRS) by October 1988. In order to meet that mandate, EPA Headquarters has planned not to update the NPL after Update #7 (except for some additions of federal facilities) until the revised system (HRS2) becomes a Final Rule. Nevertheless, during FY88, EPA regions must continue to discover and evaluate sites for remedial and/or removal actions. Data, as required by HRS2, will continue to be gathered for those sites requiring remedial action. Emergency and immediate removal sites will continue to be referred to emergency personnel for appropriate action.

### Preremedial Strategy

The strategy for identifying categories and priorities for sites in Region IV consists of the following:

- (1) determine final disposition for sites which are not eligible for NPL listing under the present HRS (and what is known of HRS2);
- (2) identify sites which could be eligible for the NPL with HRS2;
- (3) identify sites which are eligible for emergency or immediate removal; and
- (4) complete sampling for sites.

Sites falling under category 2 should have a preliminary HRS score of 25.0 or greater, and/or have additional HRS2 considerations...i.e., sensitive environment, substantial direct contact through food chain and/or soil contamination, potential air release, etc.

---

Note: This guidance is not intended to be all inclusive. Additional guidance being prepared by EPA Headquarters will be provided as it becomes available. Any questions about this guidance or guidance prepared by EPA Headquarters should be directed toward the appropriate EPA Project Officer. It should also be noted that this guidance is intended only for fiscal year 88. Additional or new guidance may be provided by Region IV or EPA HQ for use in FY89 (October 1, 1988).

A PA Update should take no more than approximately 80 hours to complete and should generally take no more than about 10-20 hours to complete. EPA is using the PA Update to make a judgement on whether or not to sample a site under an SSI. If it takes more than 80 hours to make a judgement to expend approximately 200 hours on an SSI, we have accomplished very little cost savings with the PA Update. Generally, those sites where a judgement to not sample is made (and to assign a No Further Action (NFA) disposition) will require more detailed documentation than where we plan to sample under an SSI. If the State anticipates that more than 80 hours is needed for a PA update, the EPA Project Officer should be consulted. The PA Update package must include:

- 1) a narrative summary which summarizes information gathered and recommends additional action if necessary;
- ~~2) a PA form;~~
- 3) a preliminary HRS score sheets; and
- 4) adequate documentation to support the site disposition.

#### Preliminary HRS Scores

After gathering data required for the PA or PA Update, a preliminary HRS score should be calculated. The preliminary HRS should depict the site under worst possible conditions, unless documentation supports that the worst conditions cannot exist. Generally, the worst possible conditions would require that a maximum toxicity/persistence score be assigned, maximum waste quantity score be assigned, and an observed release score be assigned for appropriate environmental routes. However, if the target survey shows no targets available to the groundwater route, then it is not necessary to score the groundwater route as an observed release. Similarly, if documentation clearly shows that only 5 drums of hazardous waste were disposed of on site, then it is not necessary to score the site with a maximum waste quantity. Whenever the worst possible conditions are not used, the supporting documentation must be provided to EPA in the PA Update package. If responsible party and/or state data is available, it may be used to support the preliminary HRS score and should be submitted with the PA Update.

#### EPA approval of PA Update

If the preliminary HRS score is greater than 25.0 and/or other HRS2 factors may allow the site to be eligible for the NPL, the EPA Project Officer must approve the site for an SSI before the State begins SSI activities (unless specific sites have been approved for an SSI in the CA). In some instances, additional documentation or clarification may be needed by EPA. In these instances, approval is not complete until all additional information is received by the EPA Project Officer. For sites scoring <25.0 that have no HRS2 considerations, sampling is not required. New sites may be substituted for these sites which were previously approved in the CA, or additional PA Updates may be negotiated with the EPA Project Officer. Only site changes approved in writing by the EPA Project Officer are acceptable.

REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
DATA BASE UPDATED 85/02/14  
T.1 - ERRIS TURNAROUND DOCUMENTPAGE: 345  
RUN DATE: 85/02/14  
RUN TIME: 22:07:53SITE DATA  
\*\*\*\*\*

EPA ID NO.: FLD980556500 SHEET 01

(ACTION : \*\_\* - FOR DATA ENTRY USE ONLY)

SF ID: \*\_\* \*\_\* \*\_\* SITE NAME: EVANS PROP SOURCE: N SOURCE COUNTS:  
\*\_\* \*\_\* STREET: OFF HIBISCUS BLVD CONG. DIST: 11 NOTIS: 1  
NATL PRIORITY: N CITY: MELBOURNE ST: FL ZIP: 32901- STS: 0  
HRS: \*\_\*.\_\* CNTY NAME: BREVARD CNTY CODE: 009 HWDMS: 0  
HRS DATE (YY/MM): \*\_\*/\_\*\* LATITUDE: 28/05/12.0 LONGITUDE: 080/37/42.0 COMPOSITE: 0  
RESPONSE TERMINATION (CHECK ONE IF APPLICABLE): PENDING \*\_\* NO FURTHER ACTION X OTHER: 0  
ENF. DISP. (CHECK ANY THAT APPLY): NO VIABLE RESP. PARTY \*\_\* VOL. RESP. \*\_\* ENF. RESP. \*\_\* COST RECOV. \*\_\*  
RSPO NAME: \*\_\* RSPO PHONE: \*\_\*-\*\_\*-\*\_\* FED. FAC. (Y/N): N NON-SITE: \*\_\*  
SMSA: 4900 USGS HYDRO. UNIT: 03080202 REG. FLD1: \*\_\* REG. FLD2: \*\_\*

SITE DESCRIPTION: \*\_\*  
\*\_\*  
\*\_\*  
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EVENTS  
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(ACTION - FOR DATA ENTRY USE ONLY)	EVENT TYPE	DATE (YY/MM) STARTED	DATE (YY/MM) COMPLETED	- - - - CONDUCTED BY - - - -	EPA	STATE	RESP/PARTY	OTHER	COUNTS
RESPONSE EVENTS	*_* (X) SITE DISCOVERY (SD)		81/06						
	*_* (X) PRELIMINARY ASSESSMENT (PA)	*_*/_**	82/08	*_* *_*					
	*_* SITE INVESTIGATION (SI)	*_*/_**	*_*/_**	*_* *_*					
	*_* REMEDIAL ACTION (RD)	*_*/_**	*_*/_**	*_* *_*	*_*	*_*	*_*	*_*	
	*_* REMOVAL ACTION (RV)	*_*/_**	*_*/_**	*_* *_*	*_*	*_*	*_*	*_*	
ENFORCE. EVENTS	*_* ENFORCEMENT INVESTIGATION (EI)	*_*/_**	*_*/_**	*_* *_*				*_*	
	*_* ADMINISTRATIVE ORDER (AO)	*_*/_**	*_*/_**	*_* *_*				*_*	
	*_* JUDICIAL ACTION (JA)	*_*/_**	*_*/_**	*_* *_*				*_*	





REGION: 04

U. S. ENVIRONMENTAL PROTECTION AGENCY  
OFFICE OF EMERGENCY AND REMEDIAL RESPONSE  
DATA BASE UPDATED 85/02/14  
T.1 - ERRIS TURNAROUND DOCUMENT

PAGE: 346  
RUN DATE: 85/02/14  
RUN TIME: 22:07:53

EPA ID NO.: FLD980556500 SHEET 02

SITE NAME: EVANS PROP

ALIAS AND ALIAS LOCATION DATA  
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\*ALIAS\* (ACTION \*\_\* - FOR DATA ENTRY USE ONLY)

SEQ. NO.: \*\_\* ALIAS NAME: \*\_\* SOURCE: \*\_\*

\*ALIAS LOCATION\* (ACTION \*\_\* - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: \*\_\*

STREET: \*\_\* CONG. DIST.: \*\_\*

CITY: \*\_\* ST: \*\_\* ZIP: \*\_\* - \*\_\*

CNTY NAME: \*\_\* CNTY CODE: \*\_\*

LAT: \*\_\*/\_\*/\_.\* LONG.: \*\_\*/\_\*/\_.\* SMSA: \*\_\* USGS HYDRO. UNIT: \*\_\* \*

\*ALIAS\* (ACTION \*\_\* - FOR DATA ENTRY USE ONLY)

SEQ. NO.: \*\_\* ALIAS NAME: \*\_\* SOURCE: \*\_\*

\*ALIAS LOCATION\* (ACTION \*\_\* - FOR DATA ENTRY USE ONLY)

CONTIGUOUS PORTION OF SITE: \*\_\*

STREET: \*\_\* CONG. DIST.: \*\_\*

CITY: \*\_\* ST: \*\_\* ZIP: \*\_\* - \*\_\*

CNTY NAME: \*\_\* CNTY CODE: \*\_\*

LAT: \*\_\*/\_\*/\_.\* LONG.: \*\_\*/\_\*/\_.\* SMSA: \*\_\* USGS HYDRO. UNIT: \*\_\* \*

# EPA Notification of Hazardous Waste Site

United States  
Environmental  
Agency  
Washington DC 2

This initial notification information is required by Section 103(c) of the Comprehensive Environmental Response, Compensation, and Liability Act of 1980 and must be mailed by June 9, 1981.

Please type or print in ink. If you need additional space, use separate sheets of paper. Indicate the letter of the item which applies.

810609

FLS 000001162

## Person Required to Notify:

Enter the name and address of the person or organization required to notify.

Name Samuel H. Halter, City Manager  
Street 900 E. Strawbridge Ave.  
City Melbourne State FL Zip Code 32901

## Site Location:

Enter the common name (if known) and actual location of the site.

Name of Site See Attached Evans Property  
Street Off Hibiscus Blvd  
City Melbourne County Brevard State FL Zip Code 32901

FLD900556500

## Person to Contact:

Enter the name, title (if applicable), and business telephone number of the person to contact regarding information submitted on this form.

Name (Last, First and Title) Kelly, Robert, Superintendent  
Phone (305) 727-2900

## Dates of Waste Handling:

Enter the years that you estimate waste treatment, storage, or disposal began and ended at the site.

Sites 1,2,3 1979 to present

From (Year) To (Year)

Sites 4, 5, 6, 7, 8 1965 to 1979

## Waste Type: Choose the option you prefer to complete

**Option 1: Select general waste types and source categories. If you do not know the general waste types or sources, you are encouraged to describe the site in Item 1—Description of Site.**

### General Type of Waste:

Place an X in the appropriate boxes. The categories listed overlap. Check each applicable category.

1. ☐ Organics
2. ☐ Inorganics
3. ☐ Solvents
4. ☐ Pesticides
5. ☒ Heavy metals
6. ☐ Acids
7. ☐ Bases
8. ☐ PCBs
9. ☐ Mixed Municipal Waste
10. ☐ Unknown
11. ☐ Other (Specify)

### Source of Waste:

Place an X in the appropriate boxes.

1. ☐ Mining
2. ☐ Construction
3. ☐ Textiles
4. ☐ Fertilizer
5. ☐ Paper/Printing
6. ☐ Leather Tanning
7. ☐ Iron/Steel Foundry
8. ☐ Chemical, General
9. ☒ Plating/Polishing
10. ☐ Military/Ammunition
11. ☐ Electrical Conductors
12. ☐ Transformers
13. ☐ Utility Companies
14. ☐ Sanitary/Refuse
15. ☐ Photofinish
16. ☐ Lab/Hospital
17. ☐ Unknown
18. ☐ Other (Specify)

**Option 2: This option is available to persons familiar with the Resource Conservation and Recovery Act (RCRA) Section 3001 regulations (40 CFR Part 261).**

### Specific Type of Waste:

EPA has assigned a four-digit number to each hazardous waste listed in the regulations under Section 3001 of RCRA. Enter the appropriate four-digit number in the boxes provided. A copy of the list of hazardous wastes and codes can be obtained by contacting the EPA Region serving the State in which the site is located.

D	0	0	7
D	0	0	8



RECEIVED  
EPA REGION IV  
JUN 9 4 24 PM '81  
ENVIRONMENTAL  
DIVISION

000968

## ATTACHMENT

### NOTIFICATION OF HARZARDOUS WASTE SITE

#### ITEM B:

##### Present Sites:

1. Approximately 120 acres of the southwest section of the Melbourne Regional Airport property, off of Nasa Blvd.
2. Approximately 40 acres of pasture land, i.e., Masier's property, located off of Eber Blvd., and east of Minton Road.
3. Approximately 40 acres of pasture land. i.e., Mr. McClenon's property, located off of Dairy Rd. and 1/4 mile west on Florida Ave.

All of the above areas are undeveloped and remote from public and no drainage from sites to public or private drinking water supplies.

Waste disposal began in 1965 and ended in 1979 at the subsequent sites:

4. Harbor City Golf Course, located west of Croton Road and north of Lake Washington Road.
5. Evans Road, east side, right-of-way.
6. John Evans property, 148 acres of pasture land.
7. Hibiscus Blvd., north side, right-of-way from Collins Avionics's west to Evans Road.
8. Nasa Blvd., north side right-of-way from Woody Burke Road to Wickham Road.



Scientific Systems  
Services, Inc.  
ILLIS

RODES

JOHN

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509

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MANTON

PALM

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Air Force  
Eastern Field House  
Hudson Avenue

MELBOURNE REGIONAL

MELBOURNE  
VILLAGE

Collins Avenue

WEST MELBOURNE

1 THOMAS BENTLEY LA  
1000 HOLLAND LA

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